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THE PROVINCES OF CANADA SERIES

Alberta

M. Belle Ricker



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*"To the future students and researchers
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THE
PROVINCES OF CANADA



A SOCIAL STUDIES SERIES

Alberta



M. BELLE RICKER

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THE PROVINCES OF CANADA SERIES

Alberta

by

M. Belle Richer



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Table of Contents

PART ONE

Alberta's Story

CHAPTER	PAGE
AT THE AIRPORT	1
THE FIRST WHITE MEN	7
The Race for Furs	8
Company of Adventurers of England Trading into Hudson's Bay	8
The French Traders from New France	10
The 'Pedlars' Enter the Race	12
The North West Company is Formed	13
THE ROADS THEY FOLLOWED	14
Anthony Henday Follows the Saskatchewan River	15
Peter Pond Finds the Athabaska River	17
Alexander Mackenzie Follows the Mackenzie River	19
Alexander Mackenzie Follows the Peace River	21
David Thompson Maps New Roads	23
Simon Fraser Follows the Peace and Fraser	25
Alexander Henry, the Younger, Travels by Land	26
Won and Lost	27
TRAINING POST DAYS	28
The Forts	28
Work at the Forts	30
The Fur Brigades	31
Amusements	33
THE MISSIONARIES	35
The Reverend Robert Evans	36
Dr. Robert Rundle	37
The McDougalls	38
Father Lacombe	40

CHAPTER	PAGE
RED LETTER DAYS	41
The Coming of the Red Coats	45
Treaty Number Seven	47
The Coming of the Railway	49
THE DAYS OF THE SETTLERS	52
The Homeseekers	52
Changes	53

PART TWO

Alberta To-day

ALBERTA'S BIRTHDAY	57
GENERAL FEATURES	58
The Size of Alberta—255,285 Square Miles	58
Four Kinds of Country	59
The Passes	60
Three Giant Steppes	61
The Importance of Alberta's Rivers	61
The Rivers and the Centres Along Them	62
Alberta's Lakes are Important, Too	68
THE GROWTH OF ALBERTA	70
The Climate of Alberta	70
THE WEALTH OF ALBERTA	72
The Wealth of the Soil	72
The Grazing Land	74
The Homesteaders	78
The Irrigated Lands	79
How Sugar Beets Are Grown	81
The Mixed Farming Lands	84
The Hungry Cow	84
Mixed Farming	88
Bee Keeping	89
Fruit Growing	89
Building Materials	90
The Wealth of the Forest	91

CHAPTER	PAGE
Alberta's Fur-bearing Animals	94
The Wealth of the Mines	96
How the Coal Was Made	96
Oil	100
Natural Gas	103
Oil Sands	104
Salt for the Fabric, Salt for Cattle, Salt for Roads	104
The Wealth of the Lakes and Streams	105
Water Power - White Coal	107
HOW ALBERTA USES HER WEALTH	108
Alberta Makes Food Products	108
How Beet Sugar is Made	110
How Egg Powder is Made	112
Alberta Makes Clothing	113
Alberta Makes Building Materials for Shelter	113
Alberta Provides for Transportation Needs	114
THE TOURIST TRAIL	115
National Parks	115
Recreation and Sport	118
Other Attractions	121
Big Game and Game Birds	122
Twenty Safety First Rules for Campers	24
ALBERTA MAKES GOOD CITIZENS	126
Helpful, Intelligent Citizens	126
Healthy, Happy Citizens	127
CO-OPERATION (WORKING TOGETHER)	129
CONSERVATION OF WEALTH	134
A Surprise Treasure Box	134
Treasures in Trust	135
Conserving the Soil	136
Forest Wealth	137
Conservation of Wild Life	141
Conservation of Oil	144

CHAPTER	PAGE
Conservation of Water Supply	144
Conservation vs. AI	146
The Seven Ticks of a Conservationist	147
SOME ALBERTA BIRDS	148
PLACE NAMES AND THEIR ORIGIN	156
Seven Cities	156
Other Place Names	158

PART ONE

Alberta's Story



At the Airport

"LADIES AND GENTLEMEN

L*You have just been listening to an account of proceedings which took place at the Edmonton Airport. The take-off of the TCA plane to-night marks the first flight of the regular air-mail service on the Edmonton-Lethbridge leg of the Trans-Canada Air Lines.*

This is station CJA now signing off "

Many people were thrilled with the glowing description of this living pageant of Alberta's history as it was broadcast over the air. Over five thousand more had gathered at the airport to witness with their own eyes the important event, for with this flight to Lethbridge, Alberta from north to south would be linked up with Canada's transcontinental air service. Already planes had been flying northward from Edmonton, even to the Arctic.

In front of the hangar the sleek shiny plane, guarded by two smartly-uniformed pilots, stood ready to receive its first load of mail.

"Keep back " shouted a policeman, as people pressed closer and closer to the powerful plane.

"Clear the way" called another.

"Look Look" came a voice from the crowd.

"Here it comes " several cried at once. The crowd drew back. The old coach, the Macleod Stage, that had carried passengers and mail fifty years before between Calgary and Fort Macleod, now tumbled into view. It was pulled by



Medeod Stage Coach

four prancing matched grays. Two old-timers, dressed in chaps, coloured shirts, and ten-gallon sombrero hats, with bandana kerchiefs around their necks, sat in the driver's seat. Two scarlet-coated officers of the Royal Canadian Mounted Police rode on either side. Beside the stream-lined plane, the historic old coach came to a stop.

Half an hour before, a hundred pounds of mail had been carried out of the city post office and deposited in the waiting coach. It had made the three miles from the post office to the airport in twenty minutes. Now the locked bags were to be transferred to the plane.

A little lady, Mrs. Harrison Young, eighty-seven years of age, was the most excited person in the crowd. She had come to Alberta when Edmonton was only a trading post. Now, as one of the earliest settlers, she was to have the honour of placing the first bag of mail on the plane.



Trans-Canada North Star at Edmonton Air Port

From the loud-speakers placed on the roof of the hangar came a description of proceedings as they took place.

With great dignity, the honoured lady carried the bag of mail, taken from the old Coach, across to the plane, and handed it to the waiting attendants. How her eyes sparkled as she accepted the beautiful bouquet presented to her in tribute to the pioneers of her day!

Following an old custom of the sea, by which the harbour master presented the captain of the first ship to leave his harbour each year with new gloves, Jimmy Bell, the airport manager, presented Captain Rankin, pilot of the plane, with a fine pair of gloves which he was to wear on the trip.

Mayor Fry complimented the citizens who, as taxpayers, had helped to build one of the finest airports in Canada. Then he handed Pilot Rankin a box of flowers from Mrs. Fry and himself, to be delivered to the Mayor of Lethbridge.

The Honourable E. C. Manning, then Minister of Trade and Industry, brought greetings from the Government of Alberta, and congratulated the Trans-Canada Air Lines on its achievement.

His Honour, the Lieutenant-Governor of the province, spoke of the progress made in Alberta following the development of aviation.

The crowd cheered, newsmen's cameras flashed, a pilot balloon carrying a small torch was released from the hangar to determine the direction and velocity of the wind.

Finally, speeches and ceremonies came to an end. All the mail was packed away in the storage space in the plane. Captain Rankin and First Officer Jack Bradley took their places, and the plane's twin motors were started. Their chatter soon rose to a roar.

Captain Rankin looked carefully at the instrument panel in front of him. Satisfied with the readings he found there, he toned down the power and gave the signal for the chocks to be pulled out from under the wheels. Co-pilot Bradley adjusted the ear-phones of his radio set and made contact with Al Brown in the control tower.

"Trip Ten calling Edmonton, radio check on night," called Bradley.

"Okay on night, switch to day," Brown replied.

Bradley switched his set to the day broadcast band and called, "Trip Ten to Edmonton, on day."

"Okay on day," replied Brown.

Captain Rankin adjusted his altimeter, opened wide the throttle, and the plane taxied out onto the torch-lit runway.

When they were ready to take off, Bradley spoke again into the radio.

"Trip Ten to Edmonton "

Bradley glanced up across the field and replied,

'Edmonton to Trip Ten, field clear, wind north-east, 12 to 15, variable Time 8 40 and 45 seconds Okay to take off "

The motors thundered as the plane picked up speed

"They're off!" shouted thousands of voices as the plane was seen to lift into the air and soar starward. For the spectators it was all over, but not so for the pilots.

Planes flying southward must fly at least 2,000 feet above the ground at all times. As Calgary is about 3,500 feet above sea level, cruising altitude is usually about 7,000 feet

At 200 feet, Pilot Rankin levelled off. He switched his eyes from the engine instruments to the flight instruments. He adjusted the stabilizer and put the plane into a climb.

The rate indicator showed 400 feet per minute. The plane climbed steadily until the altimeter told him he had reached 7,000 feet. He levelled off and adjusted his directional gyro. He listened to the steady hum of the radio beam and knew that he was on his course.

Bradley reports back to Brown at the ground station.

"Trip Ten to Edmonton. Reached cruising altitude "

Building up the speed to 185 miles per hour, Rankin and Bradley reached their destination in 105 minutes.

The Lethbridge-Edmonton link, connecting the main TCA line with the net-work of air mail services already serving the North, made the chain air-service complete.

The spectators on that memorable occasion had witnessed a striking scene of contrasts, the old and the new, but to Mrs. Harrison Young, the little lady who had pioneered in Alberta, it was living history.

She saw, again, Alberta as a land of scattered trading

posts between which the old coach had actually done service in carrying His Majesty's mail. In those days two outriders always accompanied the driver, for outlaws might be lying in wait to seize the precious load or a sudden war-whoop might announce an attack by painted, feather topped Indians.

The safe arrival of letters and parcels from friends separated by miles of territory and further separated by long weeks of ocean travel by sailing vessel was an event for which to be thankful.

She rejoiced again when the news of the first train had passed through the province, and had been one of those who had cheered into view the first train on its arrival at Edmonton. Now she was taking part in the establishment of this modern mail and passenger service. What a change in her lifetime!

One in the crowd that evening had remarked, as he noticed the No. 1 transcontinental train go puffing by on the tracks bordering the airport, "There it is! That's it, the past, present, and future, paraded before our eyes." That is what the history of Alberta is—a past of thrilling adventure, a present of rich discovery, and a future which challenges the boys and girls going to school to-day to a glorious achievement.



The First White Men

ONE HUNDRED AND FIFTY years ago, the land now called Alberta was inhabited by tribes of Indians. Vast herds of buffalo roamed over its plains. The fox, the weasel, the lynx, and the marten made their homes in its wooded regions, the otter, the musk, and the beaver lived along its lakes and streams.

There was no farming then, but every year a rich crop of furs was harvested by the Indians, for within the boundaries of Alberta lay the richest fur-bearing pastures of all America—the valley of the Saskatchewan, and the Athabaska country.

It was the search for furs which led the first white men into the province, and it was the wealth of the crop which made white men rivals in the race to set up trading posts in the places most likely to capture the trade.

THE RACE FOR FURS

At first the rivals who took part in the race for furs were the "Adventurers" of the Hudson's Bay Company and the French traders from New France. Later, when it became known how rich the rewards were, others entered the game.

COMPANY OF ADVENTURERS OF ENGLAND TRADING INTO HUDSON'S BAY

The Adventurers of the Hudson's Bay Company had set up trading posts on Hudson Bay. York Factory at the mouth of the Hayes River, and Fort Prince of Wales at the mouth of the Nelson. They had sent the young boy, Henry Kelsey, in company with a young Indian brave, to explore the land drained by these rivers. He returned with great tales about the broad plains black with buffalo, and about the wooded country and the streams where there was a great supply of furs of the finest quality. He had made friends with many tribes of Indians, and, with promises of the fine trade goods the English would give them, he had persuaded them to bring their furs to the English trading posts on Hudson Bay.

For years after Kelsey's trip, no other employees of the Hudson's Bay Company ventured inland. Every spring the Indians in their swift canoes took their catch of the season to the English trading posts on the Bay. It was a long distance to paddle their heavy loads. Often canoes, packs, and all had to be carried on their backs, for they couldn't risk losing their precious cargoes in the swift waters. This heavy labour, however, was soon forgotten, for at the forts the English

treated them well. The Hudson's Bay Company was a rich company, and the Indians paddled back with their canoes laden with the trade goods they prized so highly—blankets, needles, knives, sugar, tea, tobacco, kettles, and the steel traps, guns, powder and shot which they needed for the next season's catch.



Making portage on route to Hudson Bay

For the next fifty years, the English ships left the Hudson Bay posts with more and more furs each year. The Adventurers were quite content to remain at their posts where life was more or less peaceful, and wait for the trade to come to them instead of going out to seek it.

However, by the year 1750, the number of Indians arriving at York Factory was becoming fewer. The Hudson's Bay Company was the sole possessor of all the land drained into the Hudson Bay. The territory was known as Rupert's Land. The traders knew by the size of the Hayes and the

Nelson that these rivers must drain a vast stretch of fur bearing country, yet the supply of beaver skins and other pelts was dwindling.

Were other traders encroaching on their territory? They decided to send someone into the interior to find out. It was as they suspected. When Anthony Henday, the scout chosen to carry out this venturesome mission, reached the Saskatchewan country, he found a French trading post, and this was only one of a number of posts the French had established in the fur country.

THE FRENCH TRADERS FROM NEW FRANCE

At that time Canada was only a few settlements along the St. Lawrence River, known as New France. The French adventurers who had come to the new land had found it more to their liking (and more profitable) to engage in the fur trade than to try to make a living by farming. It was these French traders from New France who were stealing the trade. They did not recognize the claim of the English to Rupert's Land, and they stopped the Indians on their way to York Factory. In return for the trade goods they offered, the French traders would often receive the whole load intended for the English.

When Henday returned to York Factory with his report about the French who were skimming the cream off the fur trade, the English decided to bestir themselves. They knew they could no longer sit quietly at the fort. If they wanted to beat the French, they must do as the French were doing, go to the Indians instead of waiting for the Indians to come to them. Soon the Hudson's Bay Company traders were

racing westward, setting up their trading posts in an effort to get their share of the prize

The French traders were old hands at the game. They had been carrying their trade goods inland for a long time. It was these French traders who were the first white men to enter Alberta. Records tell us that in their search for furs,



Typical Hudson's Bay Company Fort

they had built a fort as far west as the Rocky Mountains two hundred years ago. They knew all the tricks of the trade. They knew the roads well, and they understood the Indians. Many of them could speak the language of the Indian tribes.

It looked as though the French were going to win this race, but something happened to give the advantage to the Hudson's Bay Company. England and France had been at war both in Europe and in America. In the year 1759 the

French lost Canada to the British. The strong French trading company was broken up. New France became Canada under British rule.

THE 'PEDLARS' ENTER THE RACE

Another rival was now to compete for the prize. The British merchants who had come to Montreal after the conquest of Canada did not want to pass up the great profits to be made in the fur business. They stocked up with Indian trade goods, and hired experienced French voyageurs to load their canoes and turn westward along the roads they knew so well. The traders were well paid and returned with a rich harvest for the merchants.

Rivalry was now keen between the Hudson's Bay Company and the 'Pedlars' as they called these French canoeists, because they carried their trade goods with them to the land of the Indians. The pedlars tried any method or paid any price to persuade the Indians to part with their furs. Brandy was added to the list of trade goods. When the Indians got

Meeting of Montreal Traders and Western Indians at Fort William



a taste of the white man's fire-water, they demanded more and more. They became crazed with liquor, and many drunken brawls took place. The Indians were being ruined, and trade was suffering. Something had to be done to build up the trade again.

THE NORTH WEST COMPANY IS FORMED

The merchant traders of Montreal decided to organize a company. It was called the North West Company. Merchants and some of the former pedlars became partners in the Company and shared the profits. The partners who remained in the West were called the wintering partners. They were to build new posts and extend the trade of the Company, while the merchant partners remained in Montreal to look after the business end.

The scheme worked well. Since they might share in the profits, the wintering partners worked hard for the Company. Every spring their canoes carried rich cargoes of furs down to Grand Portage, where Fort William now stands. There the bales of fur were exchanged for the trade goods brought up the lakes by the 'pork-eaters', as the traders from Montreal were called, for they did not need to live on wild game as the western employees did.

Each year the wintering partners of the North West Company pushed farther westward, opening up new fur-bearing country. The traders of the Hudson's Bay Company were close behind and often by-passed their rivals. Sometimes two rival posts appeared side by side, and much trickery was practised on both sides to win the friendship of the Indian tribes and capture the trade.

The Roads They Followed

THE "roads" which led the traders westward into Alberta were the rivers. Having their source in the mountains, these streams were often treacherous and impassable. Surprises and hidden dangers often lay ahead, but the spirit of adventure was keen and the will to win drove them onward. Finally the traders traced not only the main water highways of Alberta, but by these same roads they passed beyond the northern boundary and through the threatening wall of rock on the western boundary. Little did they know that, in opening up the rich territory we now call Alberta, one day an even more profitable harvest than that of furs would be garnered.

A birch bark canoe was a good means of travel, for it was strong, swift, water-tight and easily steered. Where the roads were impassable, it could be carried on people's backs. If the canoe was damaged, as often happened where there were jagged rocks or where it must be dragged up the steep banks, materials were close at hand for mending it.

Except for a few unfriendly tribes, the Indians were most helpful. They were expert canoeists and good guides. They were strong on the portage, they were good hunters, and kept the party supplied with foods along the journey. Squaws, too, were sometimes taken along, for they could carry heavy loads, set up camp, do the cooking, and they are little. When food was scarce, it was said that they could subsist on a mere licking of their fingers.

The traders in the employ of the trading companies were required to make reports and keep accurate records of their activities. From their records, maps, and diaries, we can learn much about the nature of the country they passed through.

ANTHONY HENDAY FOLLOWS THE SASKATCHEWAN RIVER

Anthony Henday was the bold scout sent out by the Hudson's Bay Company to recover the trade that was being lost to the French. He was well fitted for the job, for he had lived a wild sort of life on the Isle of Wight before coming to America. At that time, goods entering Britain from France were so heavily taxed that many cargoes were unloaded on the island and later secretly smuggled across the Channel to England at night.

Although Henday was only a boy, he knew all the signals and secret caves. He had helped to run in many a boat and to stow away the cargo. One night the law caught up with the offenders. Customs officers seized the goods and captured as many men as they could, declaring them all to be outlaws. However, Henday was quick witted enough to strike his would-be captor such a stunning blow with the bale of silk he was carrying, that he escaped to the ship just as she was moving off. Shortly he was in London, where he lost no time in applying for a job with the Hudson's Bay Company. He was accepted, and the next boat brought him to York Factory.

After four years of faithful service at this trading post, he longed for excitement again, and when he volunteered his services to go inland to stir up trade for the Company, the Governor gladly accepted his offer.

A party of four hundred Assiniboiné Indians had camped outside the fort that summer, and with these Indians Henday had spent much time, learning their ways and language. Little Deer had been his special companion, and when Henday set out, this young warrior accompanied him as guide. Henday's diary tells us that they paddled up the Saskatchewan, portaging the rapids and suffering greatly from scarcity of food, from weariness, and from hosts of mosquitoes.

In August they left their canoes on the bank of the river and struck across the prairie on foot. Cree Indians guided them to the South Saskatchewan and squaws made reed boats with which to cross it. They soon came upon the trail of Indians mounted on horses. They followed the hunters, at last catching up with them, and Henday witnessed his first buffalo hunt.

He was treated with great ceremony in the camp of the Horse Indians. They feasted on buffalo tongue and smoked the peace pipe together, but when Henday invited them to trade with the "White Chiefs living on the Great Water," the Old Chief refused, saying his men were horsemen. They could streak across the hills at lightning speed, but knew neither how to paddle nor to follow the roads to the Great Water. They did not live on fish as the Crees did. Why should they starve and perish on the long road to the White Men's forts? They would remain where they were. The buffalo were plentiful and provided them with both food and shelter. There was nothing left for Henday to do but exchange gifts and bid his hosts farewell.

He and his party spent the winter in Southern Alberta, hunting, trapping and trading. In March they paddled down

the Red Deer River to the Saskatchewan, their canoes piled high with pelts, leaving both the Crees and Horse Indians rich from their season's catch.

"Not a kettle or pot was left," Henday says. Everything had been exchanged for furs.

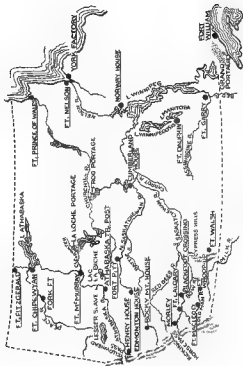
When he reported to his Company that he had met Indians who used horses in the hunt, he was accused of making up silly stories, but he spoke the truth for he had visited the Blackfeet tribe of southern Alberta.

His diary states that great seams of coal bulged out of the banks everywhere along the *Kis-Sis-katchewan Septe* (Saskatchewan,) the "Rapid Waters" of the Crees. We are not told whether this report was believed or not.

PETER POND FINDS THE ATHABASKA RIVER

Peter Pond, a North West trader, was the first to enter the northern part of Alberta. He was a hot-headed, daring fellow, and in the days when trickery was practised by both sides, he was mixed up in more than one skirmish, but there was no better man than Peter when it came to finding new roads of travel. He prided himself on having gone farther into the unknown than any other trader of his time. He knew the road by way of the Churchill River, and all the trails between the Churchill and the Saskatchewan. He was now to push his way into new territory.

Following the old, well known trail to Ile à la Crosse Lake, he pushed his way to a rocky height of land dividing the waters of the Churchill from those flowing into the Arctic. Here his party shouldered their canoes and bales of goods and struggled across a thirteen-mile portage to Clearwater.



Map of Athabasca showing location of principal trading posts

River, and on to the Athabaska at a point where Ft McMurray now stands. They paddled down the Athabaska River and soon entered Lake Athabaska.

By making this portage to the Clearwater, he had broken a trail that was to become a main highway of trade for years to come. The portage later became known as Portage la Loche or the Methye Passage, and many were the cargoes of beaver and other furs brought down by this portage from the rich Athabaska country.

ALEXANDER MACKENZIE FOLLOWS THE MACKENZIE RIVER

When Peter Pond's hot temper led him into difficulties at his post on the Athabaska River, Alexander Mackenzie was sent to replace him.

He did his duty well. Every spring he sent his canoes to the Grand Portage laden with wealth for the North West Company. Before long, his cousin Roderick was sent north to the Athabaska country. Alexander induced his cousin to build a post on Lake Athabaska. They called it Fort Chipewyan, after the tribe of Indians who lived there. It was a pleasant site, though a lonely one. Roderick spent much time making it homelike, and with his library of good books he managed to pass the time pleasantly, but Alexander often gazed over the blue waters and wondered what lay beyond. He often thought of the tales that Peter Pond had told about a great river to the north, which he said flowed around the northern end of the Rockies to the Western Sea. The British Government had offered a reward of £20,000 for the discovery of the North-West Passage, but Alexander was not so much interested in the reward as in discovery.

Finally, in the spring of 1789, after he had shipped his year's trade with the brigade leaving for Grand Portage, he bade his cousin farewell and set out—perhaps, he thought, for the Western Sea.

He managed to find the opening out of Lake Athabaska into the Slave River. Here, the rapids, where freight must be portaged to-day between Fort Smith and Fort Fitzgerald, gave his paddlers much trouble. After sixteen miles of rapids they found themselves in smooth water which carried them into Great Slave Lake. From this lake they entered a broad river down which they paddled for days. Alexander hoped that it might be the river of which Peter Pond had told him, that flowed round the mountains into the Western Sea.

But as they went on, the mountains which had frequently been in view faded away on the horizon. His men became discouraged. The Indians whom they met along the shore told them that the sea was so far away that they would be old, white-haired men before they reached it. They warned the party of cruel monsters who would swallow them up. The two Indians hunters could no longer find food. The guides deserted, although they did return later.

Twenty days after they had set out, the river narrowed and the current became swifter. Steep walls of rock rose on either side. They made their way through these ramparts and found that the river widened out over a level plain. Mackenzie knew then they would never reach the Western Sea by that route.

A few nights later, they made camp on an island that rose to a considerable height out of the water. They were about to retire for rest when they were amazed to find that the water was coming up over the island. It threatened to swamp

their canoes and wash away their baggage. The tide had entered the mouth of the river.¹ They had reached the Arctic Ocean which Samuel Hearne had reached eighteen years before.

They remained only three days before turning homeward. In eight weeks more, Roderick welcomed his cousin home again at Fort Chipewyan. The party had been gone one hundred and two days.

Alexander Mackenzie was bitterly disappointed, but Roderick was proud of his cousin's achievement and wanted him to name the river after himself. This he refused to do, but Roderick said, "We are both Mackenzies." It is a proud name, so the great river which drains the northern part of Alberta was named the Mackenzie.

ALEXANDER MACKENZIE FOLLOWS THE PEACE RIVER

Failure in his first attempt made Alexander Mackenzie more determined than ever to reach the Western Sea, so in the year 1793 he set out again, trying another road. This time he followed the river which flows into Great Slave Lake from the southwest.

In his 25-foot canoe there were, besides himself, his friend Alexander Mackay, a crew of six French voyageurs, and two Indian guides. One more member, his dog Eskimo, settled himself among the supplies as much as to say, "You left me once. It shall not happen again. Here I am and here I remain, so let's get on our way," and they did. Eskimo proved to be a faithful companion all the way, and often made himself useful by warning of impending danger.

In the fall of the previous year, Forks Fort had been built

near the place where the town of Peace River stands to-day. In October of the year 1792, portaging the rapids we now call Vermilion Chutes, they reached the fort. They spent the winter there.

In May, 1793, they left Forks Fort. Spring was in the air, the waters were smooth. The country through which the river flowed was green and beautiful with the budding birches and poplars. They sang their gay songs, marking the rhythm with their paddles. Before long the current became stronger. The river was leading them toward the great wall of mountains. In ten days' time they found themselves hemmed into a narrow gorge, with steep walls towering far above them. The waters now seethed and boiled. The voyageurs had great difficulty in steering with their paddles so they used long poles to steady the canoe. Then they attached a tow line and, leaving two men to steer and pole, the others trekked along the bank, pulling the canoe. This was dangerous business not only for the canoe and the men in it, but also for the trekkers. They were in constant danger of slipping into the swirling waters and being crushed by the rock slides which were frequently occurring. Finally they hewed steps up the rocky walls, and, by attaching the tow rope to the trees, they climbed the bank, hauling the canoe and supplies up after them. In this way they passed the dangerous rapids and crossed through the great wall of mountains.

But this was only the beginning of their troubles. High up in the mountains they came to the fork of two rivers. By following the Parsnip River southward and making a short portage, they came to the Bad River, which led them into the river we now call the Fraser. Their canoe was

badly battered. It had to be patched so many times that it was entirely changed in shape and appearance. Once it was caught by the current and whirled on its bow. Their supplies were lost and they barely escaped with their lives. Finally their canoe was crushed to pieces. A new one had to be built before they could continue their journey. They were very much discouraged, but by the time the new canoe was completed, they had decided to push on.

Friendly Indians told Mackenzie that this river ran for many moons through the shining mountains before it reached the sea. They advised him to turn back, and make a short portage which would take the party to another river. This would lead them to the sea much sooner. Mackenzie took their advice. He turned back and followed the Blackwater and the Bella Coola which led them to the Pacific. You can imagine their joy when they finally saw the green waters of the Pacific glimmering before them.

On a huge rock along the shore he wrote this inscription:
"Alexander Mackenzie By land, July, 1793"

DAVID THOMPSON MAPS NEW ROADS

Four years later, David Thompson found other roads through the mountains. As a boy, he had been employed by the Hudson's Bay Company, but it was in the service of the North West Company that he made his expedition to the sea.

He was only fourteen, attending a school in London, when a call came from the Hudson's Bay Company for boys to go out to their forts in America. They were required to know something of navigation and mathematics. David had studied these sciences and was especially interested in navi-

gation, constantly carrying a sextant, a telescope, and other navigation instruments about with him. He was one of the boys chosen for the post, and was bound as an apprentice for seven years. The school paid the Company £5 for taking him.

After spending two years in the forts along Hudson Bay, he was fitted out with a trunk, a handkerchief, shoes, shirt, a gun, powder, and a tin cup, and sent into the Saskatchewan country. He made friends with many tribes, living with the Blackfeet for some time and learning their ways and customs. He was of great service to the Company in building up trade, taking surveys, and making maps of the country.

But the Hudson's Bay Company was not interested in his surveying and map-making. They wanted him to give all his attention to trading. Thompson refused to become merely a trader, so he turned his back on the Hudson's Bay Company, walked seventy miles to the nearest North West establishment and offered his services. The rival Company welcomed him and appointed him Astronomer and Surveyor.

He followed the Bow River to its source in the mountains, he entered the region we now know as Jasper Park, and he discovered the Yellowhead Pass through which our Canadian National Railway is built.

He spent two years at Rocky Mountain House building up trade there. It was from this post that he set out in 1807 and made his way to the sea, following the Columbia River.

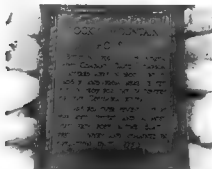
In his work as geographer and surveyor, he wrote careful descriptions of the country, the trees, the plants, the birds, and the people. He was an accurate map-maker, and to this day, some of the maps made by him remained unchanged.

The Indians called him *Koo-koo-Sint*—the man who read

the stars, but we remember him because of his great service to Alberta and to Canada, as surveyor and map-maker.

SIMON FRASER FOLLOWS THE PEACE AND FRASER

Simon Fraser, a young Scottish lad, was sixteen years of age when Alexander Mackenzie made his great dash through



Plaque marks original Rocky Mountain House
(See page 84)

the mountains. He was so greatly stirred by the tales he heard of the exploits of the explorers that he left school and entered the service of the North West Company. After ten years of service, he was made a wintering partner and sent to the Athabaska country. His energy and his ability in dealing with the Indians brought him the reward he sought, an opportunity to explore

He determined to follow the river from which Mackenzie had turned back. In 1805, with twenty men and well-laden canoes, he set off up the Peace, following Mackenzie's route to the Fraser River. Little did he know what he had undertaken, for this river proved to be the most dangerous and least navigable of all rivers, and in this expedition the men were lucky to come out alive.

After suffering the greatest hardships and near-disaster on the rocks of this turbulent stream, they at last succeeded in reaching the smooth waters of the widening mouth of the river, only to be met by an unfriendly tribe of Indians who prevented their further passage.

To-day a stone tablet with an inscription marks the place where Fraser was forced to turn back.

ALEXANDER HENRY, THE YOUNGER, TRAVELS BY LAND

Alexander Henry, the Younger, was another North West Company trader to follow Alberta's trails. He travelled widely over Northern Alberta by dog sled and canoe, exploring the Athabaska and North Saskatchewan country. In his diary he tells of many skirmishes between the Blackfeet and the Crees around Fort Augustus, near where Edmonton now stands, at that time the chief trading post of the Crees. In the country now known as Jasper Park, he built a trading post which was later named after him, Henry House.

He had charge, at different times, of Rocky Mountain House on the North Saskatchewan, and of Fort Vermilion on the Athabaska.

In an effort to secure more trade for the North West Company, Henry, too, crossed the mountains to the Pacific.

He was drowned in the mouth of the Columbia River in 1814

WON AND LOST

With this spirited display of enterprise on the part of the North West traders, the Hudson's Bay Company trailed far behind in the race. The North West Company had won, but, as it turned out, they had lost, too, for although new fur fields had been opened up west of the Rockies and many new posts built, no port had been found on the Pacific from which to ship the furs. It was too large a territory. Montreal was too far away and profits were eaten up by the tremendous costs of transportation.

Finally in 1841, the Hudson's Bay Company united with the North West Company, both companies finding it more profitable to co-operate than to compete against each other. With the capital of the two companies, and under the name of the Hudson's Bay Company, they continued to operate their trading posts, many of which to-day have grown into large department stores.

Trading Post Days

FOR over a hundred years after the explorers found the roads into Alberta, life for the white men centered around the trading posts, and many trails led to these thriving centres.

The trading posts varied in size. Some were only a single building or two where life for the trader was lonely indeed. Others were large, consisting of several buildings, and these forts teemed with activity.

THE FORTS

The Larger Forts, as they were called, were in the form of a square, in the middle of which stood the large building where the Chief Trader or Factor lived.

The dining hall in the Factor's house was sometimes very ornate with its paneled walls, hand-carved furniture, and gilded ceiling. This room was the centre of social life, and you can imagine what tall tales were told in front of the fire which blazed in the huge stone fireplace.

Other buildings within the square were the gentlemen's quarters, servants' quarters, a fur room, stables, kennels, shops, a trading post, and an Indian room.

Fort Edmonton was the most elaborate post west of York Factory. This fort, occupying about ten acres of land, was surrounded by a palisade eighteen feet high, made of trees split in half and bound by timbers. A sentinel's gallery ran

round the palisade close to the top. At the corners were square bastions.

In the palisade were two gates, a large one used by the white men and a smaller one for the use of the Indians. The chiefs used through the smaller gate to the Indian town to



Colin Fraser sorting black fox skins from his lot of \$35,000 worth of fur pelts.

smoke the peace pipe and make arrangements with the trader. Afterward they returned with their furs for trading.

Business was done through a small wicker. Only a few things were shown at a time, for the Indians were very envious, and wanted everything they saw. They were very much impressed by the scarlet coats with brass buttons, worn by the sentries and the velvet uniforms and plumed hats, the dress uniform of the traders. Sometimes, to humour the Indians, a chief was allowed to buy one of these fancy costumes, and very proud he was as he walked away in his gay attire, the envy of his brothers.

The main tribes of Indians who made Fort Edmonton their centre of trade were the Crees and the Blackfeet. They were so jealous of each other that the traders had to be careful that their anger was not aroused by treating one tribe better than the other.

The Crees were the better hunters, bringing in quantities of the finest pelts. The Blackfeet brought in dried berries, pounded meat, grease, buffalo robes, skins, and horses. They were not good traders but they were very good beggars.

WORK AT THE FORTS

The work at the fort consisted of getting food and supplies, cutting down trees and sawing them into lumber, keeping the fort in good repair, and building and repairing the boats. The furs had to be sorted, graded, and pressed into bales for shipping.

Outside the fort, there were usually a few acres of cleared land where vegetables and crops were raised. Grain was ground at the mill. Fish, game, and buffalo were packed in ice, and wild fruit was dried to add variety to the food in the winter.

Records tell us how buffalo meat was preserved at Fort Edmonton. A hole was dug in the ground and lined with blocks of ice from the river. The ice walls were solidly built up to the level of the ground. Each winter, 700 or 800 buffalo were cut into quarters, the hide left on, and the meat put into the hole. The buffalo meat was then covered over with straw and a shed built over it.

The Factor was usually kept busy looking after business for the Company, keeping accounts and records and bartering

with the Indians. The men who were content to remain at the fort, instead of exploring, spent much time in reading and study. The long journey east to York Factory or Grand Portage was looked forward to eagerly, for there was always a week or more of grand celebration at the end of their journey.



A Team of Red River Carts

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THE FUR BRIGADES

Every spring the fur brigades left the forts with the season's catch. When speed counted because each company was trying to outdo the other, the canoe was used for transporting the furs, but after the companies united, the York boat took the place of the canoe. It could carry heavier loads, as much as three or four tons, and did not require as much repairing

on the way. It was made of wood, pointed at both ends, and fitted with mast and sail, as well as with eight long oars.

Several canoes or boats made up a brigade. The guide set the time for starting and camping, and he set the speed of the journey. He saw that the cargo was properly cared for and, at the worst rapids, he acted as steersman, guiding all the boats over, one by one. At the head of the rapids, he would raise his cap and say a prayer for safe passage.

There was great excitement when a brigade set out. Before starting, each man had a good meal, then he was given his portage straps and his sack containing a blanket, spare clothes, and his drinking pot. Two clerks superintended the loading. Each boat was equipped with a kettle, frying pan, tool-box, ropes for hauling the boats over the portage, and lines for tracking, for, where the current was strong, only the steersman remained in the boat. The eight oarsmen had to become trackers.

The cargo consisted of bales of furs done up in 90-pound packs, for this size was the easiest to handle and strap on their backs for the portage. Heavy, waterproof coverings kept the precious cargo dry.

Very gay the voyageurs looked as they embarked, dressed in their blanket coats with bright sashes, tasseled caps, coloured socks, and fringed moccasins. All the occupants of the fort came down to the wharf to wish them *bon voyage*, and soon their songs could be heard as they plied their oars in rhythm.

Again on their return before the ice chained the waters, long before the leading boat rounded the bend in the river, all who remained at the fort had crowded the landing. As the brigade came into view, their answered cheer, the

cannon boomed out, the flag waved in welcome. The strokes of the bronzed oarsmen quickened, and soon the keels of the boats were grating on the rocks of the shallow water. Eager hands helped to unload the next year's supplies and the shouting crowd passed up the winding path through the gateway. In the evening, as they feasted, the hearts of the listeners thrilled to the tales of the voyageurs as they lived again the perils of the journey.

AMUSEMENTS

The people at the forts had their amusements too. At Fort Edmonton there was a good race course, and horse racing was a favourite sport. Their festivities usually ended with dancing. At the dances might be seen Indian braves in bright paint and feathers, squaws loaded with beads, voyageurs in gay costumes, and half-breeds gartering with ornaments.

Christmas and New Year's Day called for special celebrations. The year 1848 was a very gay year and food must have been very plentiful. The Indians were invited, and the Christmas feast was spread in the Indian room. On the menu there was boiled buffalo calf, mouffle (or dried moose nose,) white fish, buffalo tongue, beavers' tails, and roast goose. Bread and steaming dishes of potatoes and turnips occupied the centre of the table.

At New Year's, there was a wedding at the fort. John Rowan, Junior, was married to the daughter of the Chief Factor at Fort Edmonton. The honeymoon trip was to Fort Pitt, two hundred miles down the Saskatchewan River from Fort Edmonton where the groom was stationed.

The party consisted of the bride, the groom, and nine

other men, travelling in three carioles and six sledges, four dogs to each sledge. The dogs were decorated with brightly-coloured saddle cloths embroidered in fancy designs and trimmings. Little bells jingled as they mushed along. No supplies were carried, for good hunters went ahead to shoot buffalo.

The dogs started out at such a sharp clip that there was nearly an upset at the beginning, but they steadied down to a trot and, at nightfall, camp was made in the bush. They shovelled the snow with their snowshoes, making a bare spot on which was built a roaring fire. Hides were hung on the branches to reflect the heat. For their food they had juicy buffalo steaks, cooked over the fire on pointed sticks, salted, and eaten piping hot.

Next day as the party rounded a bend in the trail, they sighted a herd of buffalo. The dogs ran after them furiously. Over went the bride in a drift of snow. Away the dogs sped after the buffalo, and not until they became hopelessly entangled in the harness was the driver able to stop them. One man was killed, but the bride was safe.

It took seven days to make the trip, with the thermometer at times registering 47° below zero.

The Missionaries

MISSIONARIES were frequent visitors at the fort. The trading men welcomed them. In the fort they held services and started schools, for in trading post days education was looked upon as the work of the church.

They taught the Indians and preached to them in their camps. Travelling by saddle, dog sled, and snowshoe, they braved the storms of winter and risked their lives on the streams when the ice was breaking in the spring, to reach the different tribes. Sometimes they stayed in the Indian lodges for days, accompanying the warriors on the hunt, taking part in their games, and winning their confidence.

In time, with the help of the friendly Indians, they were able to establish missions. A place was usually chosen where fish and game were plentiful. Spruce trees were cut down and log buildings erected. Land around the mission was cleared and it wasn't long before the fields and gardens were not only providing for the mission's needs, but also supplying enough food to prevent starvation of the Indians roundabout when game was scarce.

The duties of the missionaries were varied. They cared for the sick, and acted as doctors and surgeons. Indians and white people both sought their advice, and the Indians came to regard the missionaries as friends. Later, when more white people entered the land and the Indians became suspicious, the missionaries were able to settle many disputes and save needless bloodshed.

U.S. FISH & WILDLIFE SERVICE

[illegible]

Exercises for Growth and Personal Skill-Building

The Lord's Prayer in Coptic Syllabics

Indians had no written language when the missionaries first started to teach. It was the Reverend Evans who invented a system of writing, called the syllabics. In his study of the Cree language he had discovered that the Cree Indians used six sounds. For each of these sounds he worked out a sign. When these signs were put together, they formed syllables of words used in the Cree language. To see if his experiment would work, he gathered some Indians together and traced some words on bark with a blackened stick. Much to the delight of

all, the Indians found they could read the white man's talk. They began to copy these signs and gradually they learned to read and write as the white man did.

Robert Evans carved these signs out of wood with his jack-knife and made moulds out of clay. Then, with lead melted down from old bullets and tea chests, he made metal type. For ink he used chimney soot mixed with fish

oil. A press was rigged up from an old fur press, the type was set and inked, and on pieces of birch bark collected by the Indians, verses from the Bible, hymns, and prayers were printed. These pages were sewn together with sinew and bound with deerskin. The Indians were delighted with the first books printed in their language.



Alberta Government Photograph
Mount Burdick

This system of Cree Syllabics, invented by "the man who could make birch bark talk" came to be used throughout all the Cree missions, churches, and schools of the West.

DR. ROBERT RUNDLE

Dr. Robert Rundle, the first missionary to come to Alberta, was the missionary who performed the marriage ceremony for John Rowan and the Chief Factor's daughter. He had his headquarters at Fort Edmonton from 1840 to 1848, and later had a mission at Pigeon Lake. He tells in his records of his success among the Crees, and about the fine singing of the Cree girls at his mission. Mount Rundle at Banff is named after this missionary, who is said to have scaled the mountain.

THE McDougalls

Of all the missionaries to come to Alberta, there is no one whose name is better known or more honoured than that of the Reverend George McDougall and his son John



Rev. Geo. McDougall



Rev. John McDougall

George McDougall had charge of many missions in the West and travelled widely throughout Alberta. When his son John came to the province in 1873, he and another son David decided to go to the south of the province, John to set up a mission on the Bow River, and David a trading post.

Into this country of the Blackfeet, John took his wife and family and household goods. Mrs. McDougall rode in the buckboard with the children, and John and David by turns rode in the cart and drove the cattle that they had brought with them. At Morley the brothers set up their mission and trading store, and there for many years the family made their home. John's work as a missionary took him to all

parts of Alberta. He travelled from north to south, living at the lodges of the Blackfeet, then moving on to the Crees, camping wherever night overtook him. When the smallpox broke out near Edmonton, he went everywhere among the sick, bringing them relief and comfort until he himself took sick. He recovered, but later found that his little daughter had died of the disease.

In the South, when the young braves were being ruined by the whiskey of the free traders, John won the lasting friendship of the Blackfoot chiefs by befriending them. He continued to petition the Government until finally the sale of fire-water was forbidden by law. Later, because of the loyalty of this tribe, John McDougall was able to be of service to the government by helping to pave the way for the signing of the treaty which gave the remaining land occupied by the Indians to the white man for settlement.

When times became more quiet, David McDougall brought to his new home, his wife, the second white woman to settle in Alberta. The McDougalls had the true spirit of pioneers. At the time when the Indians and white people were both wild and lawless, they faced dangers unafraid. Away from the comforts of civilization and despite all the hardships they were forced to endure, they loved the wide open country and enjoyed the friendship of the Indians.

In his books John McDougall relates many amusing experiences. He tells of taking part in Indian celebrations and sports. In his youth he had won the title of *The Winner*. The life he led must have hardened him in muscle and kept him in good condition, for he describes a race in which, dressed in ordinary work clothes, he easily won against his Indian competitors stripped for action.

To-day, to the memory of the two brothers and their father, the Reverend George McDougall, there stands a church and a school in both Edmonton and Calgary, and in Edmonton a street bears the name of this noble family.

FATHER LACOMBE

Father Lacombe is the name of another missionary who was greatly respected and loved by white man and Indian alike.

He arrived at Fort Edmonton in 1862 and there he began his sixty years of service in Alberta. Within the walls of the Fort he held services in a small chapel, and in a log house he started a school for the children of the people who worked for the Hudson's Bay Company. The pupils in this first Alberta school were frequently interrupted in their studies by some exciting event. The boom of the cannon might announce the arrival of the Governor or the return of a brigade, or perhaps the shouts from the south bank of the river would signal the ferry to bring someone across. Then all must run to the landing to see who it was.

Much of Father Lacombe's work was done among the Crees at Lac Ste Anne. When scarlet fever spread among the Blackfeet, he worked night and day among them, using the white man's medicine to bring them back to health, until he became ill himself and had to return to the mission at Lac Ste Anne. In their gratitude, the Blackfeet gave him the name 'Man of the Good Heart' and asked him to come among them as their 'Praying Man'. They promised that so long as he remained with them, they would not war against the Crees, and for protection he was to carry a white flag with a red cross.

Since the Blackfeet frequently came north to trade, it was decided that a mission should be built at St. Albert and soon Metis or half-breeds were clearing the soil and building was begun. The priest was every where, superintending operations and lending a hand, sawing and fitting the logs together, or working on the houses. By spring the buildings were completed. The farm was seeded and a garden planted. A flour mill was set up and the huge millstones were soon crushing the grain into flour. A bridge, the first in Alberta,

was built over the Sturgeon River which had to be crossed to reach Fort Edmonton. Short work was made of this job, for the good Father had said that anyone who did not help in the building should not cross over the bridge.

Since it was a very expensive business to have supplies brought in by York boat, Father Lacombe organized a brigade of ox carts to cross the prairie from Fort Garry to, Fort Edmonton.



Alberta Great Northern Photography

Father Lacombe's Monument

Father Lacombe was the friend of all. A service he performed in his later years was, with the help of others, the building of a home for the aged and orphans at Midnapore, near Calgary.

This "Man of the Good Heart" was the friend of Canada, too, for, when in 1885 other tribes were in rebellion against the whites, Father Lacombe kept the Blackfeet from joining the other war-parties in trying to prevent the Canadian Pacific Railway from going through their reserve. Because of this service, he was invited to dine with the railway officials when the first train reached Calgary. Mr. Stephen, president of the railway, gallantly resigned his position and Father Lacombe, elected to fill the vacancy, proudly took his place at the head of the table as an honoured guest. Afterward he often told, laughingly, about the time that he was President of the C. P. R. for one hour.

To-day the town of Lacombe and the village of St. Albert proudly bear the name of this missionary who gave a lifetime of service to Alberta. At the age of eighty-four he died, and was buried in a stone tomb at St. Albert where the little log chapel which he built may still be seen.

Red Letter Days

IN THE YEAR 1873, there were quite a number of scattered settlements in Alberta. In the north were the mission farms and native settlements. Near the Forts, former Hudson's Bay employees had taken up land and started farming. A few Métis, half-breeds of Indian and French origin, had come in from the Red River colony and a few white settlers had come from Eastern Canada. In the south, stockmen from Montana who had driven their herds across the border found the pastures rich, and remained in Alberta, increasing their herds yearly. Traders from Montana had set up trading stores and found them profitable.

The settlers lived a life of fear. In the north, they were in constant dread of raids by the Blackfeet. In the south, life was unsafe for both Indians and white men.

All along the southern border, lawless traders were crossing into Alberta with their carts and wagons loaded with whiskey which they traded for buffalo hides. These men were desperate characters who thought nothing of shooting to kill anyone, red man or white, who prevented them from carrying on their profitable business. The centre of lawlessness was a trading post which came to be known as Fort Whoop-Up because of the wild doings which took place there.

The white man's whiskey was turning the young Indians into madmen. They fought and scalped one another. They gave up the hunt and stole the cattle and horses on the ranges. The old chiefs were in despair.

Finally matters came to a head. Horses had been stolen. The white men in their search came upon the thieves in a little Indian village in the Cypress Hills. Now, to the Red Men, all animals grazing wild were, like the buffalo, the property of no one. The Indians refused to give up the horses. One night the white men took shelter along the



Old Fort Macleod

see page 100 and 101

banks of a neighbouring stream and fired on the village. Only a few of the natives escaped into the hills. The others were killed or wounded. It was a wholesale slaughter.

This massacre made the Red Men wild for revenge. The chiefs complained bitterly against the "Longknives" and the settlers asked for protection.

Now, in the year 1869, Canada had bought Rupert's Land from the Hudson's Bay Company. So Canada became responsible for law and order in the West, and the Canadian Government was not long in granting the settlers' request for

protection. They organized a police force to make the West safe for both the Indians and the white settlers.

It was a red letter day when the North West Mounted Police came to Alberta. They changed the country from a land of lawlessness to a land of peace and order.

THE COMING OF THE RED COATS

In September, in the year 1874, the Red Coats reached the southern part of Alberta. These mounted policemen had started from Fort Garry in July. There were six divisions in all, each division mounted on different coloured horses—dark bay, dark brown, light chestnut, gray, light bay, and black. Two of these detachments were to remain in Alberta.

They were a well-disciplined, well-equipped force. Their smart red coats, their brass-spiked white helmets, and their shining spurs became the symbol of law and justice.

One detachment remained in the south close to the centre of lawlessness, and a police post was established near Fort Whoop-Up. It was called Fort Macleod after Commissioner Macleod of that detachment. Another detachment under Inspector Walsh was dispatched northward to Fort Edmonton.

It wasn't long before the whiskey smugglers, cattle rustlers, horse thieves, and all wrong-doers were tracked down and brought to justice. Settlers began to feel safe and the Indians received protection from the 'Longknives'. They learned that the lawlessness of either Indian or white man would be punished.

More police posts were later established, Fort Calgary at the junction of the Bow and Elbow in the south, and Fort Saskatchewan in the north.



"Watcher of the Plains."

The Police helped the settlers in time of sickness, and protected them in time of danger. They gave the settlers tools and implements. Some of the police left the force, took up land, and established farms and ranches.

In 1904, in recognition of their good service, the King granted permission to use the word Royal, and the force became known as the Royal North West Mounted Police.

As settlement spread northward, the Red Coats took over the added duty of delivering mail to outposts of settlement. This work, now carried on by plane, the police undertook by snowshoe and dog team.

As the territory over which they maintained law and order widened to include more of Canada, the name of the force was changed to the Royal Canadian Mounted Police.

Except on dress occasions, the bright uniform is no longer worn, but the khaki dress and Stetson hat worn to-day stand

for law and order just as the scarlet coats did in former days, and the Mounties still remain the friends of the people.

TREATY NUMBER SEVEN

Another red letter day in the history of Alberta was the day Treaty Number Seven was signed. The terms of this agreement allowed the white people to settle on the last remaining land occupied by the Indians of the plains.

The Indians had long since seen that there was a great change coming. The buffalo were disappearing, game was becoming scarce, and no longer could Indians make a living hunting and trapping. The settlers had shown them a new way of living by producing a harvest from the soil.

Through their dealings with the Hudson's Bay officials, by the friendliness of the missionaries, and by the protection they had received from the Red Coats, the Indians had learned to trust the white men. Now the chiefs were ready to make terms with them.

It was September 17th, of the year 1877. Crowfoot and the chiefs of the Blackfeet had set up their tipis on the Bow River about sixty miles east of Calgary, at Blackfoot Crossing. The Red Coats in their tents a short distance away were prepared. They had the treaty drawn up ready to be signed, and they also had the gifts and money required by the terms of the treaty.

Colonel Macleod acted as Commissioner. The missionary, John McDougall, was the interpreter.

At the firing of a gun the Indians and white men assembled. The Commissioner approached, followed by a hundred scarlet-coated Mounties. The chiefs, in ermine, feathers,

and war-paint, sat in a semicircle. Behind them were first the warriors, then the squaws, decked in gay shawls and beadwork. Representatives from the trading posts were present to witness the ceremony.

Although the Red Coats and the Red Men had come armed, the Mounties with rifles and the Indians with scalping knives as well as rifles, all appeared peaceful.

When the band played "The Maple Leaf", Lieutenant-Governor Laird appeared and addressed the Indians.

"Many years ago the Great White Mother made terms with the Indians in Eastern Canada, last year a treaty was made with the Crees along the Saskatchewan. Now we come to ask you to make a treaty. The Queen wishes you to live comfortably. She advises you to allow her white children to come and live on your land and raise cattle. Should you agree to this, she will help you to raise cattle and grain so that you may live when the buffaloes are no more."

The exact terms of the treaty were made known and the meeting broke up. Three days later, Chief Crow-foot spoke for his people.

"The advice the White Mother gives us is good. I will sign for my people."

According to the terms of the treaty, the natives gave up all claims to the land and agreed to let the settlers come in.

Each chief was to receive \$25 a year.

Each head man \$15 a year.

Each man, woman, and child —\$5 a year.

Land was to be set aside for their use, on which no white man could settle. The chiefs were to be given their choice of location. Roads would be made through the reserves where needed.

Farm implements, grain, cattle, potatoes, and other necessities were to be provided. A farming instructor was to help them in their farming, and teachers would instruct their children.

To-day an Indian agent looks after the affairs of the Red Men, and on Treaty Day, once every year, the promised payments are made.

The reserve of the Blackfoot Indians now extends above and below the Crossing on both sides of the Bow. The reserve of the Blood Indians is located on the Old Man River south of Macleod. The Sarcee reserve is along the Elbow River south and west of Calgary. The Piegan reserve is in the Porcupine Hills on the Old Man River west of Macleod. The Stony Indians occupy a reserve near Morley, west of Calgary. Reserves of the Crees and other tribes are located in the central and northern part of the province.

THE COMING OF THE RAILWAY

A day in the summer of 1886 was another red letter day in the story of Alberta. On that day, the first train crossed Alberta on its way from Montreal to Vancouver. This event was to bring about great changes.

The nearest sources for supplies at that time were Fort Garry on the Red River, and Fort Benton in Montana. The trip between Fort Edmonton and Fort Garry by ox-cart had been a long, tedious journey, and not without danger.

In the south, most of the supplies had been brought in from Fort Benton by "string teams." Bul. whackers and mule drivers had operated long strings of wagons drawn by

oxen and mules, with ten or twelve teams in the string. These journeys, too, had taken several days.

A stage coach had carried mail in summer, in winter, mail had been delivered by dog teams. Now the railway would bring Fort Garry and other centres in Eastern Canada nearer, and regular mail service would be assured.



Fort Garry, Canadian Pacific Railway

Fort Garry welcomes first Trans-Canada train

Before the railway entered Alberta, the railway in the United States had been extended westward to St. Paul. Settlers coming to Western Canada used to come by train to St. Paul. Then they, with all their effects, were put on flatboats and transported down the Red River to Fort Garry, where the long brigade of carts began its trek across the prairie. The railway would now attract more settlers to the West.

As soon as it had been discovered that the fields and range lands of Alberta would produce fine food crops and good

cattle, the people had wanted to sell their surplus products but there was no place to sell them. Now they could be sent by rail to the markets of Eastern Canada.

The railway had not entered Alberta without some trouble. The Indians had not yet become accustomed to their new way of living. Some of them would not give up the hunt and live on the reserves. They hated to see the screeching fire-toboggan of the white man invade their hunting grounds.

Chief Piapot, in Saskatchewan, was one of these roving hunters. He and his followers had set up their tipis on the line surveyed by the railway. The arrival of two Red Coats had scattered the band.

When the builders had reached the Blackfoot reserve, again there had been trouble. White men with surveying instruments had come, and the Indians were afraid they would lose the land set apart for them. This time it was Father Lacombe who had calmed their fears. He arrived with presents of tea and tobacco. He assured them that other land would be given them if reserve land was required by the railway. His friend, Chief Crowfoot, trusted the missionary, and called his braves together. They smoked in council and agreed to let the building proceed, and the steel band which unites Alberta with the other provinces was completed.

The Days of the Settlers

THE HOMESECKERS

Now that the province had been made safe for settlers and a railway led to her doorway, settlers from the East began to choose homesites in southern Alberta.

When the Canadian Pacific Railway was extended northward and free land was offered by the Canadian Government, people rushed to claim choice homesites in the other districts near the railway.

Many homeseckers came from across the ocean. They left their friends and parted with their possessions to come to a new land where they could make a better living. Some came from Norway and Sweden, where the soil was thin and poor. Others came from the overcrowded countries of Britain, Belgium, and Germany. A great many came from central and eastern Europe. They were glad to come to a land where they could own their own farms, have more comforts, and educate their children.

While some of the newcomers were skilled workmen of other occupations, most of the people were farmers. To become owners of their homesteads, the homeseckers had only to occupy the land for three years and to improve it. The Hudson's Bay Company and the Canadian Pacific Railway offered land for sale. It could be bought on easy terms for as little as three dollars per acre. Many took

advantage of this opportunity to get a home. In the twenty-three years between 1906 and 1929, over 500,000 new Canadians settled in the province. Alberta had become a land of homesteads instead of trading posts.

People of the same nationality usually settled near one another. Names such as Viking, New Norway, Bruderheim, and Vegreville remind us that these communities were the choice homesites of settlers from the Old World.

The church, too, helped in settling people in new homes in the province. The Roman Catholic Church brought out French Canadians from Quebec. Legal, Mormville, and Picardville are French-speaking communities.

The Mormons from the United States, under Bishop Card, settled near Cardston. A churchman named Barr organized the Barr Colony and brought settlers from Britain. The troubles these newcomers met were many, but finally they got themselves settled in their new homes. Bishop Lloyd became their leader, and on his homestead a minster, or church, was built. The settlement grew into the town known as Lloydminster.

CHANGES

As more land was fenced in, more grain was produced and the settlers had more products to market. Roads had to be built. Another railway, the Canadian Northern, later called the Canadian National, opened the door to the northern part of Alberta. Branch lines connected the settlements. New railway lines were built to connect with the Mackenzie water route.

Elevators to store the grain began to dot the railways.

More supplies had to be shipped in, and warehouses were needed. Stores took the place of trading posts. Towns and cities grew, and factories began to line their borders.

To-day, long trains carry Alberta's grain to ports both eastward and westward. The rivers which led the traders into the province now provide power for homes and factories, and irrigate the land of the farmer.

Gravelled or paved highways replace the old crooked trail of the buffalo and the two-rutted road made by the creaking ox-carts. Trucks speed their heavy loads to supply the needs of eight hundred thousand people. Cat-trains and flying box-cars make their way northward.

The sleek, shiny monoplane that made history when it took off from the Edmonton airport with its first load of mail was only the beginning of what was to come. To-day, airfields are located in every part of the province. Regular air service links Alberta with points in Canada and the United States, and planes bound for Alaska, Russia, India, and China re-fuel at Alberta's airports.

PART TWO

Alberta To-day



Alberta's Legislative Building, Edmonton

Alberta's Legislative Building, Edmonton



Charles Palmer, Archives of Canada

**Her Royal Highness, Louise Caroline Alberta
Marchioness of Lorne**

Alberta's Birthday

IT WAS IN THE YEAR 1882 that Alberta first became a name in Canadian history. In that year, four districts were carved out of the North West Territories. They were named Athabaska, Alberta, Assiniboia, and Saskatchewan. Alberta was named by the Marquis of Lorne, then Governor-General of Canada, as a tribute to his wife, Her Royal Highness, Louise Caroline Alberta, the fourth daughter of Queen Victoria.

Alberta's birthday, however, was the year 1905, for in that year the two districts of Athabaska and Alberta were joined to form the province of Alberta.

General Features

THE SIZE OF ALBERTA —255,285 SQUARE MILES

ALBERTA IS A vast province. If all the land were farm land, it could be made into more than 250,000 farms, each containing 640 acres. The province is 750 miles long. Its width varies from 180 miles along the Montana border to 400 miles at its widest part. With a population one-tenth that of the city of London, it is more than twice the size of the whole of the British Isles. It is larger than any of the countries in Europe, except the Soviet Republic.

On the east lies its sister province of Saskatchewan, of the same age as Alberta, and on the west it is bounded by the great wall of the Rockies. It stretches from the 49th line

Cattle Ranch, Southern Alberta

Alberta Government Photograph



of latitude, surveyed by David Thompson, to the 60th line of latitude separating the province from the North West Territories, much shrunken in size since the provinces were carved out of them

It is a beautiful land of snow-capped mountains, tumultuous rivers, evergreen forests and golden plains. In summer and autumn it is bright with colour. The flowers of the mountains come down to meet the flowers of the prairie.

The prairie rose is the floral emblem of the province.

FOUR KINDS OF COUNTRY

Flying westward across southern Alberta from the Cypress Hills on the eastern border, travellers pass over miles of level land. The rivers widen out over broad valleys. The grass is short, and in places the land looks dry and parched. It is treeless except for a few poplars and willows. Further west, small hills lie at the foot of the mountains. This is the *prairie and foothill country*.

In central Alberta, from Red Deer to Edmonton, the country looks greener. The grass is longer. The landscape is dotted with patches of woodland, and shrubs top the banks of the river valleys. This section is known as the *parklands*.

From Edmonton to the Peace River, the trees grow closer together, and north of the Peace River the thick-blooded evergreen trees crowd in close to their thinner-blooded neighbours, as if to give them protection. This is Alberta's *bushland or forest region*.

The Western boundary of Alberta runs along the Great Divide and many of the high peaks lie within Alberta's

borders. Below the timber line, the slopes are clothed with forest. Nestling among the peaks, clear lakes lie like tear-drops. Dazzling snow caps crown the mountain tops, and glaciers spread their wings out over the crevasses. This is the *mountain region* of Alberta.

THE PASSES

Through the passes in the mountain wall on the west of the province, run the railways and the highways.

The *Crowsnest Pass* near the International boundary is the lowest pass, and through it the Trans-Canada planes cross the mountain barrier.

The *Kicking Horse Pass*, farther north, was chosen as the route for the Canadian Pacific Railway through the mountains.

The *Yellowhead Pass* forms a gateway for the Canadian National Railway.

Yellowhead Pass

Alberta Great Western. Photograph.



THREE GIANT STEPPES

From the great wall of rock on the western boundary, three giant steppes lead down to the prairie levels of Canada. The first steppe is so broad that it covers nearly all of southern Alberta. It tilts from 4,500 feet above sea level on the western boundary, to 2,100 feet on the eastern boundary. The northern end of this first steppe slopes off toward the Arctic, the southern corner of it slopes toward the Gulf of Mexico. The central and main part of the steppe slopes toward the Hudson Bay.

The *Peace* and *Athabaska* drain the Arctic Slope.

The *North Saskatchewan* and the *South Saskatchewan* drain the Hudson Bay Slope.

The *Milk River*, a small stream, drains the small section of Alberta which slopes toward the Gulf of Mexico.

THE IMPORTANCE OF ALBERTA'S RIVERS

We already know that the rivers were the roads which led the first white men into Alberta, but long before the white traders came and even before the Indians lived here, the rivers were busy building up and shaping the land. Formed by the melting snow and ice, the tumbling rivers washed great boulders, stones, pebbles, and sand down the mountain sides.

The large rocks and stones remained at the foot of the mountain wall, where the foothills are to-day. The smaller stones and the gravel and sand were carried on further. As the rivers spread out, the sand and soil flattened out in

level stretches toward the second steppe on the eastern side of the province. So you see how the rivers helped to form the giant steppe which tilts so alarmingly from west to east.

For years and years, the rivers have been shaping and changing the appearance of the surface of the land. In times of flood they break out of their courses, form new channels, and overflow their banks, making the valleys fertile with the layers of rich soil which they deposit.

The white people liked to settle near the rivers where they could be sure of a supply of water. By building dams, they could store up water for use on the farm, or for running factories and mills. People crowded into the centres where there were factories and mills, and many towns grew up along the rivers.

THE RIVERS AND THE CENTRES ALONG THEM

The *Peace River* starts high in the Rockies, forces its way through the mountain wall and flows into the Slave River. The town of Peace River at the mouth of the Smoky, where Sir Alexander Mackenzie wintered on his way to find the Western Sea, is now an important business centre in one of the best farming sections of Alberta.

Fort Vermilion, established by the fur traders, is 300 miles further down the river, not far from the rapids known as the Vermilion Chutes.

Dunvegan is another town along the Peace.

Grand Prairie, on one of its branches, is an important centre in a good grain country, and is on the road to Alaska.

The *Athabaska River* has its beginning in the great Colum-

by ice fields, a great glacier which comes down close to the Jasper-Banff Highway, and flows into Lake Athabaska.

Jasper, on the Athabaska, is in Jasper Park at the entrance to Yellowhead Pass, which was found by David Thompson. This pass was used by park trains until the railway was put through.



Athabasca River, viewed from Jasper Park

Jasper Park Lodge

Whitecourt has grown up where the McLeod tributary meets the main river.

The town of Athabaska is situated where the Athabaska River makes a sharp turn to flow northward. Between the town and the mouth of the Clearwater, the river is rough and rapid. At Grand Rapids the river takes a drop of sixty feet in half a mile.

McMurray is at the mouth of the Clearwater, which enters into the muddy waters of the Athabaska.

Waterways, on the Clearwater along the fur trading route discovered by Peter Pond, is to-day the end of steel. Here transfer must be made from train to boat or plane, to go down north.

Fitzgerald, along the Slave, is at the beginning of the old portage where to-day freight must be transferred to trucks.



The Chimneys—Last remaining traces of
Rocky Mountain House

to be hauled to Fort Smith at the other end of the 16-mile portage, in the North West Territories.

The *North Saskatchewan River* also has its beginning in the glaciers of the Columbia ice fields, on the Jasper-Banff Highway. It joins with the South Saskatchewan in the province of Saskatchewan, near Prince Albert.

Rocky Mountain House, which once rivaled Fort Edmonton in importance, is located where the small Clearwater River joins the North Saskatchewan. "The Chimneys", all that remain of the old trading post, may be seen to-day about two miles from the town.

Edmonton, now grown from a trading post to a great industrial city and airport, is the capital of the province. The banks of the river here are steep, and a long high bridge, as well as several smaller ones, spans the river.

St. Albert, where Father LaCrosse's church is preserved, is five miles northwest of Edmonton, on the Sturgeon, a small tributary of the North Saskatchewan.



Interior of first cathedral in the West. Still on original site, the building has been completely enclosed in a brick structure—now the Museum of Manages.

Ponoka is situated on the Battle River, a tributary of the North Saskatchewan. It is an important centre in the midst of a fine dairy country.

Fort Saskatchewan, the first site of Fort Edmonton of the Hudson's Bay Company, and of Fort Augustus of the rival North West Company, is about twenty miles farther down the river in the centre of a good mixed farming region.

The *South Saskatchewan River* has its beginning in two mountain streams, the Bow and the Old Man.

Banff, in Rocky Mountain National Park, is on the Bow River

Cochrane, an important ranching centre, is also on the Bow River

Calgary, established as a North West Mounted Police post, is now an important industrial city, situated on the Bow River where it is joined by the Elbow



Calgary

Photo by Everett's Studios

Macleod, once a Mounted Police post, now an important centre in the ranching area, is on the Old Man River

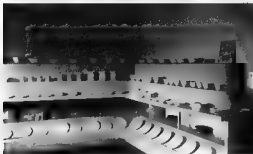
Lethbridge, on the Old Man River, has grown to be a city. It is a great coal-mining centre. In this city is a plaque which tells us that Nick Sheran, an early settler, took the first load of coal from Alberta to Montana.

Cardston is on the St. Mary's River. Here the first Mormon settlers began using the waters of the river to irrigate their land.

Red Deer, a city on the Red Deer River which also starts in the ice fields of the Rockies, is in the centre of a fine mixed-farming district.

Drumheller, now a city on the Red Deer River, is the centre of a great coal mining area.

Medicine Hat, on the South Saskatchewan near Alberta's eastern border is the sixth town we have found to be located



Medalta Pottery

Alberta Government Photograph

along a river. It has gas wells, and is developing as Canada's principal centre for the manufacture of glass and pottery.

The *Milk River* drains a very small portion of Alberta, and flows across the American border to join the Missouri River, a tributary of the Mississippi. It is important, however, because it supplies water for irrigation in a dry area.

There are no large centres along the river, but the small town of Milk River is situated on a highway leading from Lethbridge to Courts, a port of entry into Canada.

ALBERTA'S LAKES ARE IMPORTANT, TOO

As well as supplying food, lakes store up surplus water and prevent it from flooding the land.

In southern Alberta, where there is not too much rainfall, the rivers easily hold all the water. The dry chinooks lick up the moisture and there is little to be stored, so there are few lakes. The largest lake in southern Alberta is *Lake Pakowski*.

In Central Alberta, the many small lakes make good summer resorts for the people living in the towns.

Cooking Lake is near Tofield. The lake is a sea-drome for planes flying northward.

Lake Wabamun is convenient to Edmonton.

Pigeon Lake is near the city of Wetaskiwin.

Sylvan Lake is near the city of Red Deer.

Gull Lake is near Lacombe.

Buffalo Lake is near Scetler.

Cold Lake, on Alberta's eastern border, is famous for trout fishing.

In northern Alberta, there are a great many small lakes and three larger ones.

Lesser Slave Lake, between the Peace and the Athabaska, supplies large quantities of fish.

Lac La Biche, east of the Athabaska River and draining into it, is also good for fishing.

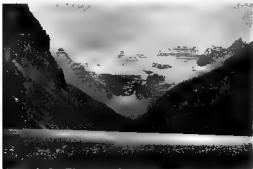
Lake Athabaska is part of the Mackenzie water highway and supplies tons of fish yearly.

Alberta's mountain lakes attract tourists and sportsmen from all parts of the world.

Lake Louise, a gem of beauty, is in the Rocky Mountain

National Park. High mountains hem it in. The blue of the sky and the green of the trees are reflected in its clear waters. Victoria Glacier on Mount Lefroy forms a striking background.

Emerald Lake and the *Lake in the Clouds* can be reached by a mountain trail from Lake Louise. The Indians call the



Beautiful Lake Louise

Source: *Canada and the West*, 1904

latter the Goats' Mirror for, according to legend, the old billies, who do not like man's company, go there to comb their beards.

Lake Minnewanka, at Banff, is another beautiful lake.

Jasper Park Lodge is built along *Lake Beauvert*. *Lake Edith* and *Pyramid Lake* provide pleasant camp sites.

Waterton Lakes, in Waterton Park on the southern boundary, adjoin Glacier Park in the United States, forming one of the Peace Parks jointly owned by two friendly neighbours.

The Growth of Alberta

SINCE the year 1882, when Alberta became a name in Canadian history, the population of the province has increased over forty times

What has brought so many people to Alberta? Many reasons could be given, but one good reason is the climate. Everyone likes to live where the climate is sunny and healthful, where outdoor sport can be enjoyed and where the weather encourages the growth of good food crops

THE CLIMATE OF ALBERTA

Alberta is on the top step of the giant stairway leading down from the mountains, so the air is fresh and healthful

The province extends so far north that the long hours of sunshine in the summer make crops grow and ripen quickly, and the long, light evenings give plenty of opportunity for outdoor sport. During the short days of winter, the temperature drops sharply. In central and northern Alberta, and in the mountains, the snow and ice are favourable for skiing and ice sports

Except in the south, Alberta has sufficient moisture. The rains in early summer give the moisture needed for the seed to sprout and grow. The sunshine of the long days that follow gives a chance for the ripening and harvesting of the crop

Warm winds from the Pacific ocean, blowing over the mountains, drop their moisture on the Pacific slopes and continue on their way. As moisture is precipitated, the air is heated and becomes dry. As these currents of air descend on the Alberta side of the mountain they sometimes descend with great speed and become compressed. The pressure again adds heat to the air, and the winds flow down over Alberta as hot dry winds. Because they usually descend over the territory of the Chinook Indians, these winds became known as chinook winds and are common in the south of the province. They quickly melt the snow in that region, and the grass, although short, remains nourishing all winter on the range lands. In summer these same winds suck up the scanty moisture from the ground and sometimes leave the crops dry and ruined.

Because the province has more hours of sunshine per year than most places, it is known as Sunny Alberta.



Growth in Population

(1 fig. represents 20,000)

1882—20,000

1947—800,000

The Wealth of Alberta

ALBERTA IS a rich province. The furs found by the early traders were only one source of wealth. These furs became fashionable among the wealthy people of Europe. Robes were elaborately fur-trimmed, beaver hats were the fashion, and buffalo robes were in great demand. The traders made a fine profit, and tried to discourage the coming of settlers, but when it became known that there was wealth in the soil, and that fine food crops could be raised, the settlers could not be kept out.

Still other sources of wealth were discovered. Following the settler came the prospector, the miner, the oil-driller, for below the soft blanket of earth, rich in plant food, were found fuel materials and other minerals. These can be used in many ways to supply the needs not only of people living in Alberta, but also the needs of people living in other parts of the world.

THE WEALTH OF THE SOIL

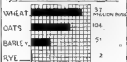
During all the years before the white man came to Alberta, the soil had not been disturbed, for the Indian tribes did not grow crops. So the settlers found the soil rich in plant food that had been stored up, year after year. There were great stretches of prairie where they did not need even to clear the land of trees, as the settlers who came to Eastern Canada had to do.

INDUSTRIES 1940

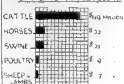
FOX FARMS	1276
OIL WELLS —producing	530
GAS WELLS	512
*SAW MILLS + 300 portables)	400
COAL MINES	200
*BAKERY'S	180
*FLOUR+FEED MILLS	119
*CREAMERIES + CHEESE FACTORIES	116
*VEGETABLE PLANTS ...	41
*BREAKFAST FOODS stock+poultry foods	31
*TEXTILE PLANTS	30
*REFINERIES	10
*PACKING PLANTS	3
*LEATHER TANNERIES	12

What raw product is used in those marked with a *

1940 YIELD of GRAIN CROPS



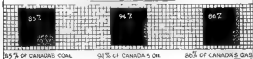
VALUE of LIVE STOCK and POULTRY



SOURCES OF WEALTH



ALBERTA HAS IN RESERVE



THE GRAZING LAND

The prairie and foothill country south of Calgary is famous for good grazing grass. The cattle men found this out about seventy-five years ago when they drove their cattle northward from Montana, at first for summer pasture, and later to

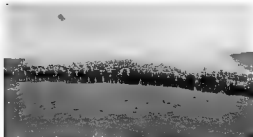


Cattle grazing in the foothills

remain. Soon many owners had great herds grazing on the rich pastures in the south, known as the cattle country. Most of the land belonged to the Government, and the ranch men leased it, paying from 2c to 5c per acre each year for the right to pasture their cattle. Some of the ranches covered nearly a million acres, and had many thousands of cattle. Senator Pat Burns and Mr. George Lane are two men who still are remembered for their vast ranches and their fine herds.

For years the land remained unfenced and the cattle roamed freely over the ranges both in winter and summer.


Occasionally the winter weather would be exceptionally severe and, in the spring, dead cattle by the thousands could be counted in coulee bottoms, where they had wandered for shelter. Generally, the chinook winds kept the snow well melted and, feeding on the rich "prairie wool", the cattle lived through the winters with little or no feed from the cowboys and owners.



Round-up Time

Author by J. H. Hines

Early in the summer came the main round-up when the new calves were roped and branded with the mark of the owner. Cowboys from every ranch would gather to work together. Each outfit had its own chuck-wagon and its own band of extra saddle horses. All the cattle from an area perhaps twenty miles across would be driven to one spot. There the animals belonging to each ranch were "cut out" into separate herds. The ownership of the calves was easily known for they ran close at their mothers' sides, worried and frightened by the noise and snorting. These young

animals were quickly roped and branded. A hot iron, pressed against their sides, left a mark that could not be erased. The ranches were known by the brands they used and the Bar U () , the W R, the Forty-four (44) and many others were commonly known all over the south. Calgary became the meeting place for the owners and cow hands. The cattle



Alberta Government Photograph

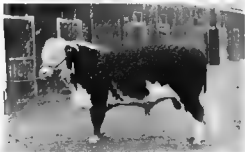
Branding a Calf

were shipped from this centre and it became known as Cow Town. The annual Stampede held in this city, where there are contests in roping, broncho-busting and chuck wagon racing, reminds us of those early ranching days.

When the settlers began to arrive in the south, much of the range land was fenced in, and most of the ranches to-day are smaller in size. Since the ranges are smaller, grass is neither so plentiful nor so cheap as it once was, and ranchers are much more careful in caring for their stock. Hay and fodder are stored during the summer for winter feeding, and losses, even in the worst winters, are very light. The Bar-U

Ranch, one of America's largest ranches, and the A.P. Ranch owned by the Duke of Windsor, are near High River.

On these ranches, large numbers of high-grade cattle are raised every year. The Calgary Bul. Sale is the largest affair of its kind in the world, and each spring pure-bred animals worth many thousands of dollars are sent to the



Gray Lord prize bull from herd of Frank Corbett—worth \$11,900

ranchers to improve the quality of their herds. Prize animals often sell for as much as \$10,000 each. Horse raising is an important business, and Southern Alberta is the most important sheep-raising area in Canada.

As farmers learned how to manage the soil better, much of the grazing land was brought under cultivation.

Now such towns as Nanton, High River, and Okotoks, once stopping places in the ranching country for the stage coach from Macleod to Calgary, are growing centres of business, made prosperous by the production of both grain and cattle.

THE HOMESTEADERS

As soon as railroads were built, settlers began to arrive. The cattle men resented their coming, but the land was rich and fertile and farming produced much more wealth per acre than cattle ranching. Each settler chose a homestead, one hundred and sixty acres of land, for which he paid the Government nothing at all. After he had fenced the land, ploughed a few acres, built a house and lived there for three years, the land became his own. This offer of free land attracted thousands of young men. They came from Ontario and Quebec, from Arizona and New York, from England, from Sweden, from Germany, and from many other countries across the sea, to become British subjects, to make homes and rear families in this rich, new, pioneer land.

Homesteading was not an easy life, and many tales of hardship are still remembered by the old-timers of every district. Houses were generally wooden shacks covered with black tar paper, or in some cases built of layers of prairie sod piled one upon the other. Fuel was scarce, and neighbours were few. Often the nearest store was many miles away across unmarked prairie. Doctors and hospitals were rare indeed. One thing helped more than anything else. Everyone was friendly. Neighbours shared scarce implements or took turns helping at jobs needing more than one man. Best of all, they learned the lesson of co-operation, of self-reliance, and of sharing.

THE IRRIGATED LANDS

Many of these new settlers, finding land so level and easy to work, attempted to grow crops in areas where the rainfall was not plentiful. Sometimes they got one or two good crops before the drought struck to ruin their new farms. The soil was rich and good, only water was needed to guarantee fine crops every year. In many of these dry areas the communities have worked together since to develop irrigation projects.

First, they locate a river with a steady, reliable flow of water. Across such streams dams are built, or the water is drained into large storage lakes. Large canals are dug, often running for miles, to carry this stored up water to the dry fields. From the main canal, small ditches branch out, and from these again still smaller ditches lead into each field. Across his field each farmer ploughs deep furrows so that the water can be led to every part of the crop.

Using irrigation water is a tedious task. The water is controlled by small wooden dams until it reaches the field. In the field ditches the farmer uses a heavy canvas with which he can stop the flow of water and turn it out to soak into the thirsty soil. Too much water will kill the young crops and the farmer often stays in the field all night long directing the water to the spots where it is needed. Each farmer must take his turn using the water, and each man gets a fair share.

One of the largest irrigation projects is known as the Eastern Irrigation District. It lies between the Bow and Red Deer Rivers around the towns of Bassano and Brooks. Water for this project is taken from the Bow River where the great Bassano dam has been built. Irrigation projects



Map showing irrigation projects

are also found around Raymond, Magrath, Lethbridge, Picture Butte, Taber, and other centres. Altogether about half a million acres are irrigated in Southern Alberta and it is estimated that many times as much land can be irrigated. Work has already started on the St. Mary River project. When completed, this will provide water for nearly 350,000 acres of new land at a cost of about \$15,000,000.

Even though this seems to be a huge sum

of money, the project will soon pay for itself through increased crops and industries. All kinds of grain, alfalfa and clover hay, corn, cereals, peas, beans, carrots, pumpkins, asparagus, and even small fruits and berries will provide wealth and food for the people of Canada.

Along with the special farm crops, irrigation is bringing to Alberta many factories and industries directly connected with farm products. The Broder Canning Company has already established two large canneries at Lethbridge and

Taber These ship hundreds of carloads of canned vegetables each year. Pickle factories, feed mills, aparies, cheese factories, and creameries use the products of the farm to bring more food from Alberta to a hungry world. Most important of all are the huge sugar factories located at Raymond, Picture Butte, and Taber.



Courtesy Canadian Manufacturers' Association
Field of sugar beets being harvested

HOW SUGAR BEETS ARE GROWN

The sugar beet makes sugar out of the soil, air, sunshine, and water. It does not look at all like an ordinary garden beet. It is nearly the colour of a turnip and usually weighs two or three pounds. It is always thirsty. Its root goes deep into the soil in search of the food and water it craves. Southern Alberta has the right kind of soil and all that is required for growth, except water. This need is provided by irrigation.

Farmers take great care in preparing the soil. They want to make it as easy as possible for the beet to grow in a soil that is full of life-giving materials. They often choose land that has raised corn the previous year because it is usually free of weeds. The earth may be ploughed in the fall so that the snow and moisture can soak in better. During



Piles of sugar beets at factory for processing

the winter, barnyard manures are spread on the field to enrich the soil. In the spring it is ploughed again and worked fine by the disc and harrow. All the little hollows are tilled in and the little ridges levelled down by a drag so that the irrigation water can get to every plant. Finally, the field looks like smooth, black velvet.

The seed bed is now ready. The thick, soft blanket of fine soil is on the top and underneath are the minerals and stored water needed by the plant. The sun warms the bed, and about the last of April it is ready for the seed.

A clever machine, called a drill, is drawn by either horses or tractor and it plants four rows of seed at a time. The rows are exactly twenty-two inches apart and are as straight as though drawn with a ruler. The seed falls from little cans attached to the drill. It is planted at just the right depth (a little over one inch), and right beside it falls a spoonful of special plant food, called "fertilizer".

If everything works out as planned, the little plants begin to show their heads in two weeks' time, thick and close together. When they are about one inch high, the really hard work begins. The weaker plants have to be pulled or hoed out, leaving the stronger plants with plenty of room to grow. What tiresome work it is, bending over the long rows, day after day, pulling out the weeds and extra beets so that each beet stands eight inches from its neighbour on either side. One man is able to "thin" out only about ten acres of beets. After the "thinning" comes the weeding. A cultivator cuts out most of the weeds, but those directly in the beet row must be hoed out by hand.

Then the water is turned on. Between the rows are furrows. These are filled with gleaming ribbons of water from the ditch at the head of the rows. The greatest care must be taken at watering time. Too much water will drown the young plants or cause the earth to crust so hard that the growth is hindered. Too little water will mean an uneven crop and a light yield. The crop must be watered three or four times during the summer.

All summer long the air, water, soil, and sun do their work. The weeds are hoed out a third time, and the crop is cultivated at least once more. By the end of September a large amount of sugar is stored away in the beet root.

Toward the end of September the crop is harvested. The beets are loosened with a plough. Workers move up and down the rows, pulling the beets, slashing off the tops with long knives, and piling the roots in rows. The beets are loaded on trucks and taken to the sugar refineries. The noble beet has completed its work and is ready to yield for men's use its stored treasure.

Each acre grows from ten to twenty tons of beets, which produce from 3,500 to 7,000 pounds of sugar. Imagine, more than three tons of sugar coming from one acre of land! Not all the beet is used up in the sugar-making. The tops make good silage and the pulp or waste from the factory is excellent for fattening hogs and cattle.

THE MIXED FARMING LANDS

The Park Lands of Alberta are a mixed farming area, producing, yearly, millions of bushels of wheat, oats, barley, and rye, as well as livestock, poultry, and garden vegetables.

With the development of a good type of wheat which matures before the early frost, prize-winning wheat can now be grown in the Peace River area and even farther north.

THE HUNGRY COW

It was David Fife who first began experimenting with wheat to produce a variety that would ripen quickly.

He obtained a sample of wheat from a friend in Scotland. Only one single kernel matured. That one kernel sent up five heads. One day a cow wandered into the garden and ate two. Mrs. Fife ran to the rescue, chased away the cow,

and saved the last three. Lucky it was that the cow did not take one more bite, for the seeds from three heads produced a variety known as *Red Fife*, which could be grown in Western Canada. Dr Charles Saunders crossed this *Red Fife* with a variety brought from the cool mountain area of India, and he developed an earlier variety, the famous *Marquis* wheat, which gave to the prairies the title of the "Bread Basket of the World".

Much experimenting has been carried on since, to produce a type of wheat which will mature before the killing frosts of cooler areas, and which will withstand disease as well as the attacks of such insects as the sawfly and cut-worm.

Garnet wheat was brought out as the earliest ripening variety of all. *Red Bobs 222* was another early variety, and of better bread-baking quality than *Garnet*. *Thatcher* and *Regent* are varieties which resist stem rust, a disease which attacks the stem and leaves, and starves the plant. *Rescue* is a solid stem wheat variety which defeats the sawfly, common to Alberta.

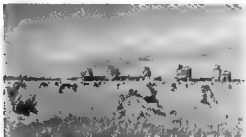
The champion wheat grower of 1947, Mr. S. J. Allsop, living at Red Deer, Alberta, won his title, "Wheat King of North America", with *Reusard*, an early variety, judged to be the finest among 3,000 samples.

A variety produced in 1947 is known as *Saunders*. It is said to be almost as early as *Garnet*, good in bread-baking quality, and resistant to other bothersome diseases, such as rust, rot, and smut, a bad disease caused by tiny plants entering the young wheat plant. These parasites live unseen until the heads of the grain are ripe. Then masses of dirty material appear where the grain ought to be.

These are but a few of the many varieties that plant

breeders have developed. Wheat growers choose the type which best suits the soil and growing conditions in their locality.

The cut shows the leading varieties grown in Alberta in 1947. You will see that the famous Marquis variety is still a favoured type.



Green field — green in roots

Great changes have taken place in farming methods since the days when Father Laumie brought the first plough into Alberta to turn up the soil on the mission farm at St. Albert. That plough was pulled by one horse and turned up one furrow at a time.

To-day, on our large farms, a tractor pulls the plough which cuts many furrows at a time. It drags a disking machine and harrow over the ploughed ground to make it fine and soft. Then, when planting time comes, a seed drill takes the place of the old method by which the farmer walked up and down, scattering seed from a sack slung over his shoulder.

When harvest time comes, machines again do the work which at one time was done by the use of the old time scythe, sickle, and cradle. A binder to-day cuts and binds the grain into sheaves and lays it even in rows across the field. Men who follow the machine stook the sheaves together ready for threshing.



Combine in operation

To remove the kernels from the stalk, the threshing machine takes the place of the flail of pioneer days. The sheaves are carried by wagon and are thrown into the noisy thresher. The bards are cut by whirling knives. The grain is beaten and torn and shaken, and thrown and blown about the inside of the machine until all the seed cases are broken open. The kernels are dumped into a waiting truck or bin.

The dirt and weed seeds fall in a pile beneath the thresher and the chaff and straw are blown out through a long pipe into a large straw pile at the back of the machine.

On many of the farms the thresher has been replaced by

the combine. This is a combination of the binder and thresher. It cuts the ripe, standing grain, but instead of tying sheaves, it beats and separates the kernels and straw much like the thresher. It handles the grain much more easily and cheaper than a binder and thresher. A truck drives alongside and the grain is carried away to storage or market.

MIXED FARMING.

Much of the grain in the mixed farming area is fed to stock. Beef cattle are found on nearly every mixed farm, and dairying has become a first-rate industry. Creameries are built in most towns, and Alberta cheese and butter have won many prizes for their fine quality. Condensed milk, produced at Red Deer, is sold in stores throughout Canada.

In 1944 Alberta led the Dominion in the production of hogs. One out of every three pigs raised in Canada that year came from Alberta.

Aacotte Gerben, prize milk producer. Record, 14.29 lbs. butter fat
27.745 lbs. milk—Mar. 24, 1945



Photo by H. H. D. Smith, courtesy of the Alberta Dairy Producers' Association

The raising of poultry, chickens, turkeys, geese, and ducks grew to be a very important business during World War II. The chicken house to-day is a modern egg factory, heated and lighted by electricity. It is sometimes two or three storeys high and houses thousands of high grade birds. Brooders, hatching thousands of chicks at a time, have taken the place of the mother hens.



"Modern Egg Factory"

The year 1944 broke the record in egg production—nearly 40 million dozen eggs were produced that year, which is over 75 dozen per minute.

BEES KEEPING

Another branch of mixed farming is the keeping of bees. Bees thrive well in Southern Alberta, wherever there are crops of sweet clover or alfalfa, or an abundance of nectar-producing blossoms.

They do a double service for man, for in spreading pollen they help the plant to produce seed, and in changing the nectar into honey they provide a good energy-producing food.

FRUIT GROWING

As hardier varieties of fruits are being developed and more care given to cultivation, fruit growing is becoming an

industry in which more and more Alberta people are engaged. On irrigated lands, on experimental farms, in nurseries and in sheltered gardens, apples, plums, cherries, and berries are being produced in increasing quantities.



Alberta Horticulture Photograph

Alberta Fruits and Vegetables

BUILDING MATERIALS

The sand and gravel in Alberta's soil, and limestone which once lay on the bed of an ancient sea covering the province, make good building materials. The clay is modelled into useful utensils, and sand helps to make glass for houses. Deposits of gypsum have been discovered along the Peace

River below Peace Point This bed extends for about fifteen miles and is fifty feet in thickness. It contains over one billion tons of material. There are other gypsum deposits in Jasper Park and in the McMurray district.

Gypsum is sold in large lumps and then ground to spread upon the land as fertilizer. It is also used to make plaster of Paris, and plaster and wallboard.



Alberta Government Photograph

Alberta Lumber

THE WEALTH OF THE FOREST

Although Alberta is a prairie province, more than half of it is covered with trees. The forest regions are along the mountains and in the north bordering the parklands. The best timber is along the Athabaska River and along the Rockies.

The trees are mainly spruce, tamarack, lodge pole pine, jack pine, poplar, and birch. The spruce, the evergreen

used most often for Christmas trees, is the most important. It is used for building and construction and makes good paper. Tamarack, the evergreen which loses its needles in winter, makes good fence posts, railway ties, and telephone poles because the wood is hard and durable. The lodge-pole pine, so called because the Indians used it for supports for their tipis, makes mine props. It and jack pine may also be used for railway ties, but the wood is treated first to make it last longer. Birch has a fine grain, and takes a good polish, and may be made into furniture. Poplar is a nice white wood, but it is difficult to handle because it twists badly. However, if it is carefully selected, it can be made into boxes and even into furniture. It is used chiefly by settlers for fuel and fence posts, and for other purposes about the farm.

Most of the trees suitable for sawing into lumber grow in forest reserves.

When lumbermen wish to cut the trees, they must apply to the Government of the province for permission. If the sale of timber on this area is approved, then tenders or bids are called for. Usually the sale goes to the highest bidder. In this way the lumberman pays for the timber he cuts. The land on which he cuts the trees is called a "timber berth". On this berth he is allowed to cut down only the trees of merchantable size, that is, those which are 11" or more at the butt, 18" above the ground. A timber cruiser goes over the stand of timber and marks the trees to come down. The area to be worked over is divided into strips and the lumberjacks work in sections.

When a tree is to come down, the fallers, usually working in pairs, make a big notch with an axe in the trunk of the tree a few feet away from the earth, on the side toward which

they wish the tree to fall. On the opposite side a smaller gash is made. Into this gash they insert a cross-cut saw which is a long saw with handles. Grasping the handles, the fallers push and pull the saw back and forth until the tree is nearly cut through. The tree creaks and cracks, and with a little more sawing it comes crashing to earth.

Buckers, using a short saw called a buck saw, strip the felled tree of its branches and saw it into logs. If it is a large job, a power saw may do this work.

When the woods begin to look thin and littered with logs and stumps, the powder monkey goes to work to blow up the stumps and clear the way for a road to get the logs out. In large camps a bulldozer does the work of clearing.

The logs are piled on sleighs pulled by tractors, sometimes as many as thirty to a tractor, taken to the nearest railway station, where they are loaded on cars and shipped to the mill where they are sawed into boards. If the timber stand where the logs are being cut is near a river, the logs are floated down the river in the spring. Sometimes portable sawmills, moved on skids, do the work of sawing in the woods where the cutting is done.

The lumber camp requires many workers. We are certain to see them all if we stand near the cook house door when the gong, a triangle of steel or a swinging iron pipe, struck by the cook, rings out the call, "Come and get it!" The workmen waste no time in accepting the invitation and the hungry men make short work of the steaming hot meal spread on the long board tables. There are the fallers, the buckers, the drivers, the mechanics, the bush foreman, the bookkeeper, the cooks and their helpers, and others that make up the crew.

The bunkhouse is their sleeping quarters, where the beds are built in two tiers, one above the other against the wall. The building is comfortable, warm, and well lighted. There are other buildings, too, such as offices, sheds, supply houses and recreation rooms where there are radios and reading material.

The work may be hard and the cold may be keen, but the lumberjacks live a healthful life outdoors, with pleasant companionship. The forest is their home for the winter.

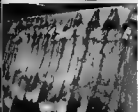
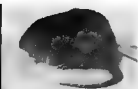
There are approximately 500 sawmills in the province, and Alberta stands sixth in the Dominion in lumber production. A small amount of pulpwood is shipped to Vancouver for making paper. With the new Pulp and Paper Mill planned for the province coming into production, paper may soon be added to the list of made-in-Alberta forest products.

ALBERTA'S FUR-BEARING ANIMALS

Although many rich cargoes of furs have been shipped from the province since the days of the fur trader, Alberta is still exceedingly rich in fur-bearing animals.

Numbers of fox, marten, weasel, squirrel, lynx, muskrat, and beaver are still trapped, and trading posts are still operated in the northern part of the province. Round his cabin in a wide circle, the trapper sets and baits his traps with their powerful steel jaws, and sets his deadfalls. In the spring, he loads his canoe and journeys with his catch to the nearest trading post.

To-day, however, the airplane has largely replaced the canoe, and the fur business does not depend entirely on the trapper. There are many fur farms where fox and mink are



Merle Thompson Photograph

Foxes, Mink, and Muskrat

raised in pens. The fur of these animals is improved in quality and there is great demand for these fine furs.

Edmonton is the centre of the fur business in Alberta. Some of the pelts are made up in the province. Others are sent to London, England, as they were, in trading post days. The value of the furs in the 1943-44 season amounted to over 12 million dollars.

THE WEALTH OF THE MINES

Alberta, unlike any of the other provinces, has an abundance of mineral wealth, yet no metals. The five non-metallic minerals are —coal, oil, gas, tar sands and salt. Alberta is Canada's fuel-producing province. It stands first in the Dominion in the production of coal, and contains more coal reserves than all the rest of Canada together. It is estimated that Alberta has about 15% of the world's supply.

The first traders and explorers reported the presence of coal in Alberta. Blacksmiths at Fort Edmonton used coal which they found in the ground. When the Canadian Pacific Railway reached Alberta, coal from Lethbridge was shipped to Medicine Hat to feed the train engines. A sternwheel steamer called the *Bronson* was first used for this purpose, but the Saskatchewan River proved difficult for navigation. Then a narrow gauge railway was built. It was known by old-timers as the "Turkey Trail".

To-day Alberta's coal not only runs engines, but is used to heat houses, run machinery, and make coke and gas.

HOW THE COAL WAS MADE

You have noticed that a piece of coal looks much like a piece of wood. You may have seen prints of bits of leaf or stem on it. These prints were formed when the coal was being made, for coal is made from growing plants. Geologists, who have examined these prints and studied the layers of rocks lying between the beds of coal, have put the story together for us.

Imagine, if you can, what Alberta was like ninety million years ago, for that is when the story of Alberta's coal starts. At that time the weather was warm and moist all the year round. A thick growth of strange plants and trees covered the land, swampy ground. Some of the trees looked like



Wade Able to Coal Mine

giant ferns. Horsetails and mosses, which are small plants to-day, grew to an immense size. Strange flowering plants grew luxuriantly.

It was a good thing that there was no human life in those days, for people would have been greatly troubled by the immense insects and flying creatures. We are told of a huge species of dragon fly thirty inches across from wing tip to wing tip, and cockroaches five inches long. It was a good thing, too, that all the animals living then were amphibians, for no other kind could have gotten along very well in such swampy land.

In time, the trees and plants died and fell into the swamp. Others fell on top of them, making a thick mass embedded in the mud and water. They did not decay as do trees that fall on dry land, but a chemical change took place. At first, the mass looked much like the plant material in a muskeg to-day. After many years, it became blacker, like peat. As more trees and plants died and mud covered the mass, the pressure and chemical change made the peat harder and blacker.

After a long time, parts of Alberta began to sink very slowly. It kept on sinking until the layer of peat became the bottom of a sea. More mud and sand was washed in over the peat, and more changes took place.

Later, after thousands of years, the land rose again, and more trees grew. These in time died, too, and formed a second layer of muskeg and peat. The land sank again and this layer was pressed down to the sea bottom. Again the land rose and a third forest grew. The same thing happened as before, and three layers of plant material were pressed down by the water and the layers of mud and sand above.

After millions of years of change, the sand became sandstone, the mud became shale, and the buried forests became coal. To-day there are three coal-bearing levels in Alberta. They are separated from one another by layers of sandstone and shale from 700 to 3,000 feet thick.

Isn't it wonderful to think that when we burn coal to-day, we are being warmed by the stored-in sunshine which made the forests grow ninety million years ago?

Where the coal-bearing area lies close to the surface—as it does near Edmonton—the top layer of soil, sand, and gravel is scraped away and the coal broken up and stripped off. Sometimes it is necessary to blast away the rock to

break up the coal. When this method of strip-mining is carried out on a large scale, the jaws of a huge electric shovel dip into the broken coal. The long arm, called a crane, swings round and dumps the load into cars and trucks.

Where the coal-bearing level is far down between layers of sandstone and shale, a deep hollow called a 'shaft' is made. The miners ride down the shaft in a 'cage' to a second or third level. To get the coal out, large blocks are marked off by cutting deep grooves in the wall of coal. Deep holes are then drilled and filled with dynamite. At a safe distance, the fuse is lit and the explosion breaks the coal apart. With pick and shovel the men dig it out and load it into cars which are hoisted to the first level, where they are hauled through a long tunnel to the surface.

Where mines are equipped with modern machinery, cutting, drilling, and loading are all done by electricity. An electric locomotive pulls the "trips", as the lines of cars are called, to the tippie, which is the building at the head of the mine, where the coal is screened and graded.

The longer the plant material is under pressure, the more change takes place and the harder it becomes. When changes have gone on so long that nine-tenths or more of the coal is carbon, it is called hard coal or "anthracite". Soft or "bituminous" coal is not nearly so old. It is about six-tenths carbon. Nearly all of Alberta's coal is of the soft variety. The softest kind, which is brownish in colour, is called sub-bituminous and is used for domestic purposes. The hardest grade of coal is mined near the mountains.

The principal mining areas are in the mountains at Crowsnest Pass, Mountain Park, Coalspur, Nordegg, the Brazeau area, and at Drumheller, Lethbridge, Edmonton, and Taber.

In the year 1947, a total of 8,074,596 tons was mined in Alberta

Crowsnest led with 1,967,880 tons
Drumheller mined 1,857,416 tons
Mountain Park mined 954,049 tons
Coalspur mined 754,775 tons
Edmonton mined 493,133 tons
Lethbridge mined 462,322 tons
Taber mined 343,720 tons
Other mines made up the balance

011

Can you imagine, in these days of machines and fast travel, getting along without oil? Yet it is only within the last hundred years that it has been in great demand

Gas and Oil Absorption Plant at Hardisty, in Alberta's Turner Valley

Photo by Dr. Howard



The early explorers reported that oil seeped through the sand along the banks of many of the rivers of Alberta. In the southern part of the province, the early settlers collected it in pails and sold it at a dollar a gallon to farmers, for greasing their machinery. It was not used for heating and lighting at that time for it frequently exploded.

When it was discovered that the explosive part, the gasoline, could be separated from the oil and used to run automobiles and planes, an intensive search was made for it in many parts of the world. Oil was struck in Alberta and it was thought that great quantities of it might be stored away below the surface.

Although in some places traces of it may be seen above ground, to find it in any quantity men must bore down with sharp drills thousands of feet through the rock, and thousands of feet of pipe must be used to bring it to the surface.

Like coal, oil has been in the making for millions of years. It was formed from plants and animals that lived in the shallow sea that covered the land. In time, as the land sank, these plants and animals were buried by layers of sand and the shells of sea animals. The land, we are told, rose and sank many times, forming many layers of mud, sand, and shells. After millions of years, these layers became rock. The mud became shale. The sand became sandstone and the shells were cemented and pressed together into limestone. Sandstone and limestone are porous, with holes much smaller than those in a sponge, but still large enough to let the oil seep through. Where there are layers of sandstone and limestone, the oil can travel from place to place. Shale is not so porous and will not allow the oil to go through. In places where the layers of sandstone and limestone are

wrinkled and pushed up, sometimes the oil gets trapped in by the non-porous rock. There it lies in pools until some shake up occurs in the earth's crust or until man bores through the non-porous rock which traps it in.

If the drillers strike the pool, the oil may rush out in such force, that it is difficult to control. Such a well is called



Extraction plant at Black Diamond, in the Turner Valley

a "gusher". If they do not succeed in finding the oil where they are searching, the well is called a "dry" well.

In Alberta, the first oil area discovered was at *Turner Valley* in 1913. To-day there are many producing wells in this field. Other important fields are at *Faber*, *Floydminster* and *Wainwright*. *Rain River* in the foothills and *Vermilion* are two of Alberta's newer fields.

The latest discoveries made are in the *Peace River* area in the north, and the *Leduc-Colony* area in central Alberta, which is fast becoming a producing field where more and more wells are coming into production.

The crude oil is shipped in tank cars or trucks to refineries. There it is separated into the different materials it contains: gasoline for cars and planes, kerosene for lighting, fuel oils for ships and oil burning stoves, lubricating oils for machines, paraffin for household purposes, and other products.

Alberta is now producing 90% of Canada's oil, and stands second only to Trinidad in the Commonwealth.

Alberta's oil business is just beginning. In time, she should have oil to sell in large quantities to the rest of the world.

NATURAL GAS

Gas is another fuel product of Alberta. Like oil, it travels through the porous rock, and for millions of years has lain pent up by non-porous rock. Being lighter than oil, it lies above the oil, and, often, drillers strike gas first. Sometimes the layers of rock lie in such a way that gas is struck without finding oil. When a big pocket of gas is found, it rushes out with great pressure. When this pressure is controlled, the gas is piped through pipe lines to towns and rural communities, and used for heating, lighting, and power.

It was first struck in Alberta at Medicine Hat. To-day the surrounding communities are all supplied with this convenient fuel.

Turner Valley gas supplies Calgary, and gas from the *Viking* field is piped to Edmonton and vicinity.

Other important gas reserves are near *Tafel* and the town of *Athabasca*.

Alberta has over 100 producing gas wells and provides 70% of Canada's total natural gas supply.

OIL SANDS

Along the Athabaska River, men do not need to bore down into the rock to find oil. For a hundred miles along this river, the high banks are a soft, sticky mass of tarry sands, every grain of which is encased in a film of oil.

Tests have proved that twenty square miles of these sands will give at least one billion barrels of oil, gasoline, tractor fuel, Diesel oil, and asphalt. By products of the sands will be useful for roofing, paint, battery insulation, and rubber industries.

Peter Pond was the first to discover this rich source of wealth. The trappers covered the seams of their canoes with the tar they got from the sands.

To-day two plants are in operation. One is at *Bitumont*, some fifty miles down the river from McMurray, and the other is at *Absarok*, two miles from the end of steel at Waterways. In these refineries, the bitumen is separated from the sand for road surfacing, and gasoline and oil are shipped from Waterways down the Athabaska River to supply the needs of the North Country.

SALT FOR THE TABLE, SALT FOR CATTLE, SALT FOR ROADS

Some years ago, drillers for oil at McMurray were surprised when, instead of oil, the well yielded a briny liquid. The well was some distance from the railway, so another well was drilled near Waterways, the end of steel.

They discovered that underlying the town and district, 700 feet down, was an immense bed of salt 200 feet thick.

A plant was built at Waterways. Water was forced down the well to dissolve the salt. The briny liquid was pumped up and the salt was separated by evaporation.

Now vacuum pans and modern machinery are turning out salt at the rate of 100 tons per day. For table and domestic use, it is put up in 2-pound cartons, or in bags weighing $3\frac{1}{2}$ pounds, 7 pounds, and 14 pounds.

Salt for cattle is pressed into blocks. For shipping away in large quantities, it is put up in 50 and 100 pound bags.

The most recent discovery of this useful mineral is at Elk Point, where another thick deposit underlies the surface. The new plant, now ready for operation at this point, will increase Alberta's production of this valuable product.

This source of wealth is very important to Alberta, for as well as its many other uses, it has been found to have value in road making. It is mixed with clay, sand, and gravel, about two pounds to the square yard. The mixture is spread on the surface to a depth of 4 inches or more. It is then smoothed and sprinkled enough to dissolve the salt, and rolled smooth. As the surface dries, it "sets" and remains hard.

THE WEALTH OF THE LAKES AND STREAMS

Fish in Alberta's central and northern waters provided one of the chief sources of food in fur trading days, and when game was scarce it was fish that prevented a famine.

The chief fishing wealth of the province to-day is found in the lakes of this region. Lake Athabaska, Lesser Slave Lake, Cold Lake, Wabamun, and Pigeon Lake all provide a plentiful supply.

The chief kinds of fish are whitefish, pike, pickerel, and

trout. Much of the catch of whitefish from Lake Athabaska and Lesser Slave Lake, and Cold Lake, is shipped to Chicago, Boston, and other eastern centres. A recent discovery shows that goldeyes, a popular species, formerly found in the lakes of Manitoba, will thrive well in the waters of Wood Buffalo Park.

Trout fishing in the mountain lakes attracts many sportsmen.

To conserve this fish supply, the Government has established fish hatcheries at Banff, Jasper, and Waterton. Hatcheries are pleasant, clean rooms fitted with long, narrow troughs placed about three feet from the cement floor. Fresh water moves through these troughs continually. The eggs for hatching are placed in hatching baskets and suspended over the troughs. The fish hatch out of the egg, tail first, and slip into the water below. At this stage the fish are called "fry". For about two weeks, the little fish lives on the yolk sack attached to its under side. When the yolk is about gone, the fish are fed ground liver mashed to a paste. In about two weeks' time they have grown into "fingerlings".

After about fourteen weeks in the hatcheries, the fish are placed outside in rearing troughs sunk into the earth. It is very interesting to watch these lively youngsters crowd around their feeding trays in a thick maze of fins and tails. When feeding time comes, they are always hungry, and they grow fast.

When the fingerlings have grown large enough to be "planted", they are taken out in large cans containing about five thousand fish. In the top of the can there is a space with a perforated bottom. This is filled with ice to keep the water cool. The splash of the water when the cans are

carried helps to freshen the water and to aerate it. This is very important, for the fish breathe air from the water they take in through their gills.

At the place where the fish are to be planted, the cans are tilted into the stream so that the water from the stream will mix gradually with the water from the can.

In this way, thousands of fish are planted every year in Alberta waters.

WATER POWER — WHITE COAL

The rapids which hindered the first white men in their travel along the water roads in Alberta, are to-day of great service. By the use of huge dynamos, the force of the water is transformed into electric power to run machines and light homes.

In the swift mountain streams there is a great wealth of power. We are told that there are thirty-four good sites where power plants could be operated. As yet, however, only a few of these have been developed. The one which provides the most power is the Ghost River plant at the confluence of the Ghost River and the Bow. This plant has a capacity of 36,000 horsepower. There are four other power plants along the Bow River, providing a total capacity of 100,000 horsepower.

As more dams are built and more plants completed, power lines are extended to serve rural communities as well as towns and cities, so that gradually the farmer's home, his stock barns and poultry houses are being electrically lighted, and an increasing amount of the work on the farm which was formerly done by hand can now be done by electric power.

How Alberta Uses Her Wealth

MUCH OF THE WEALTH of Alberta is used by the people of her own province. Surplus products are traded for things she does not have at home, or sold to other countries. In her flour mills, dairies, and packing plants, the wealth of the farm is processed. In her saw mills, factories, and refineries, raw materials are made into finished products. In her research laboratories, new ways of using her coal, oil, and other sources of wealth are being discovered.

Many products are already being made in Alberta for home use. As the demand increases and as goods are sold outside the province, more money will be available for building roads, schools, and hospitals, and for providing health services.

To increase production of Alberta-made products and make them more widely known, Alberta has adopted as her slogan "*WHAT ALBERTA MAKES, MAKES ALBERTA*."

ALBERTA MAKES FOOD PRODUCTS

In many towns of Alberta, flour, meal, and breakfast cereals of many kinds are produced. Bakeries make biscuits and bread. Malt for beverages is brewed from Alberta grain. Oil and oil cakes from flax seed make good food for cattle.

Alberta's vegetables are canned at Taber and Lethbridge.

Packing plants contract to send a regular supply of bacon, hams and tinned meat to Britain and other countries

Dairies make high-grade butter, cheese, condensed milk, and ice cream

The refining of salt and the preparation of iodized salt is another industry



Plant of the Canada Packers, Edmonton

Plant of the Canada Packers, Edmonton

Many aparies market honey

Beet sugar factories at Raymond and Picture Butte turn out millions of pounds of sugar a year. Beet pulp and beta lasses are used as food for cattle and lambs.

Egg-drying plants make egg-powder. During the war, Alberta's two plants were able to dry from 12 to 15 thousand cases a day—that is, nearly half a million dozen eggs a day.

HOW BEET SUGAR IS MADE

In a sugar beet factory, there is the beet end and the sugar end. Starting at the beet end, the beets take twenty-eight hours to go through the entire process and emerge as sugar, pulp, or molasses at the sugar end.



A view by the railroad

Beet sugar factories at Picture Butte

The loads of beets are dumped by machine and carried by belts to the huge storage piles. These piles cover acres of ground, and contain 60,000 tons of beets or more at each factory.

Washing. The beets are knocked into a ditch or flume, filled with fast running water which carries them from the

pales to the factory building. From the flume they are lifted by a huge wheel to the beet washer.

Slicing—When the beets are spotlessly clean, they are dropped into the slicer. Thousands of razor-sharp knives slice them into shreds.

Separating—Now, all warm, steamy, and greyish-white in colour, they are moved along a belt to huge tanks where they are steeped in hot water under heavy pressure, until the sugar is soaked out of them. There are two products resulting from this: a sweet juice, and the pulp. The pulp goes through a pipe to an outside pit. The juice is pumped to purifying tanks.

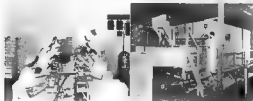
Purifying—In these tanks, lime is passed through the juice. This cleanses and condenses the impurities. Then carbon dioxide gas is passed through the juice to get rid of the lime. The juice now goes through filters, where sulphur cleanses it of all impurities.

Thickening and Crystallizing—The juice must now be thickened, so it is boiled until tiny crystals of sugar begin to form. These crystals, coated with sticky molasses, are whirled at a tremendous speed in a huge drum until the unwanted molasses disappears through the screen which lines the drum, and gleaming white crystals of sugar remain. A stream of warm water is played over them. They are then put in a drying machine.

Sorting and Sacking—After this, they are cooled and sorted in sizes—large crystals, medium and small. The sacking machine weighs out exactly the right weight. The sewing machine seals the bag, and the sugar that the plant made is now in the bag, ready for shipping.

HOW EGG POWDER IS MADE

In an egg powder plant the eggs are broken on special tables built for the purpose. Twelve breakers are seated at a table. The eggs are drained in an automatic electric



Cracking Room

Egg Drying Chamber

Scenes inside egg powder plant

beater. From this they are pumped to a vat, where they are cooled to a temperature of 38° Fahrenheit. From the vat, the egg mixture is pumped to a drying chamber by a high pressure pump. It is sent with such force through a nozzle full of fine holes that it looks like a fog.

Directly below the fog spray, a high-speed fan sends a hot blast of air heated to 325°F . The hot air takes the moisture out of the egg fog, and the solid or meat part of the egg drops into a conveyor which takes it to the packing room. There it is packaged and made ready for shipping.

It takes $2\frac{1}{4}$ dozen eggs to make one pound of egg powder. Sugar is put with some of the powder so that it may be used for baking. Egg powder is shipped from Montreal to Britain every year, as are also millions of dozens of shell eggs.

ALBERTA MAKES CLOTHING

In former days, the Indians met the clothing needs of their people by making moccasins and garments from moose and elk hide. The decoration of beautiful bead-work and porcupine quills and embroidery makes these garments still popular. To-day, furriers make the furs into luxurious garments.

Hides from farm animals are tanned and made into leather for belts, caps, mittens, mackinaws, windbreakers, leather helmets and aviation hats.

Alberta wool is made into blankets at Magrath, and woven and knit goods are made at other centres throughout the province.

Garment factories turn out dresses, aprons, uniforms, overalls, hospital garments, and sportswear.

ALBERTA MAKES BUILDING MATERIALS FOR SHELTER

The Indians found that buffalo hides made fine coverings for their tipis. The first white settlers cut down trees for log houses, fitting them together by hand. People from Central Europe made their houses from Alberta sod, darning them with prairie grass. They used clay for making their huge stoves and for plaster.

To-day Alberta's saw mills and planing mills turn out building materials, such as lumber, lath, and sashes for doors and windows, —all from Alberta trees.

Limestone and cement are prepared and packaged at Alberta plants. The Canadian Cement Plant at Exshaw is being enlarged to turn out 5,000 barrels of cement a day.

Birch and fir are made into furniture and flooring.

Brick, glass, and tile are made at Medicine Hat and at Redcliff. Medalta pottery is an Alberta product made at these plants. The clay is obtained from a river bank near these centres.

Pear and moss make mostex for insulating. Rockwool is another insulating material made in Alberta.

Tar, paper, creosote, tar, shingle stain, and charcoal are all products of Alberta's forests. In Alberta also are made beds, springs, mattresses, chesterfields, and furniture.

ALBERTA PROVIDES FOR TRANSPORTATION NEEDS

The old Red River ox-cart which served the needs of the early settlers was made of wood from the forests. Shagganappa (strips from the hide of the ox and the buffalo) bound the rims of the lofty wheels. Hides were tanned to make leather for harness, bridles, and saddles.

With the coming of the railway and power lines, Alberta made railway ties and telephone poles. With the automobile becoming popular, there came the need for fuel, good streets, and highways. Refineries produced gasoline for driving power and lubricants for smooth running, as well as quantities of sand, gravel, salt, and asphalt for road surfacing.

Paved highways now connect the principal cities. Dangerous curves are being straightened out and traffic signs erected for the protection of the traveling public.

In winter, Alberta planes used in the north are specially equipped with skis to reduce friction and insure safe landing on the snow-covered runways. Regular transportation by plane can thus be carried on all the year round.

The Tourist Trade

FEW PLACES offer more attraction to pleasure-seekers than does Alberta. There are parks, mountain and lake resorts, recreation grounds, and sports of a wide variety, even to skiing in summer and swimming in winter. There is hunting, shooting, and fishing in season. The tourist trade brings into Alberta millions of dollars yearly.

NATIONAL PARKS

Banff Park, established in 1885, is the oldest of Alberta's national parks, Jasper Park is the largest. A motor road 150 miles long leads from one to the other. Long tongues of ice from the roof-tree of our continent—the Columbia

Maligne Lake

Alberta Government Photograph



ice fields, stretch down to the roadway. Waterton Park joins with Glacier Park in Montana to form one of the International Peace Parks. Upper Waterton Lake lies on the boundary between the United States and Canada. A



On the Banff-Jasper Highway

steamer will carry you from the Canadian end to Coscahoun Camp at the American end.

From the moment you are welcomed by the scarlet-coated Mountie at the entrance to any one of these evergreen mountain wonderlands until the "Come Again" sign bids you farewell, your visit is one of keen enjoyment.

A well-paved road takes you into the heart of the mountains. Beside a crystal lake, where a spring bubbles down

from the mountain, you make camp. You go fishing or canoeing, or follow the footpath round the lake and explore the haunts of your animal neighbours.

A lodge constructed of poplar sticks, stone, and mud,



Alberta has many beautiful camp-sites

shelters a colony of beavers. High up in the slender top of a pine tree a pair of ospreys have built their nest. The father bird towers aloft, keeping watch over their outdoor home.

Before dawn, friendly ground squirrels scurry about over your tent roof. You dash down to the lake for a morning dip to find back Bruno there before you. Of course you politely turn your back. You didn't really need a swim.

anyway! Later, Bruin calls around at your camp to help himself to a free lunch.

Along the grassy trails you watch Pika, the small tailless rabbit of the Rockies, going about his business of hay-making. He carries a neat bundle of clipped grass to add to his hay pile. He will spread it out and keep it in the sun to cure before he stores it away for the winter. In a tree you may get a glimpse of Prickly Porcupine. He seems dull and lazy, but do not disturb him. He is a solitary fellow and will let you know he doesn't like company.

From high up in the rocks comes the shrill, warning whistle of the gray-cloaked marmot. He will not let you or any other intruder come near. The spiral-horned mountain sheep come down to feed on the lower slopes, but the black-horned goats stay high up on the ledges.

Perhaps you pack your sack, climb the mountain at your back door, and stay overnight in the shelter at the top to watch the purple peaks turn to rose at sunrise. You may watch the glow of your camp-fire dwindle in the evening, or gather with other guests round the hospitable fire-place in one of the modern hotels. Wherever you make your home, in hotel, cottage, or camp during your visit in these mountain parks, you drink in the beauty and grandeur and breathe deep of this life-giving air, fragrant with pine and hemlock.

The dark closes in and the tinkling of the waterfall lulls you to slumber.

RECREATION AND SPORT

In the summer, members of the Alpine Club scale the rocky

heights. The slopes are treacherous and the peaks high enough to challenge the best climbers. The Hot Springs at Banff and at Radium, and the Miette Hot Springs near Jasper, attract many visitors who seek relief from rheumatism.

Special trains carry loads of sport-lovers to the annual Ski Tournament and Winter Carnival held at Banff. An Ice Palace is erected, snow statues are set up, Indian tips

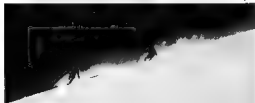


Photo by Rexford

Sliding with a thrill

line the street, coloured lights glitter, and all are in gay attire for the procession which accompanies the Queen on her way to the Palace, where she is crowned with great ceremony.

At the Carnival there is speed and fancy skating, canoe racing on ice, sking, tobogganing, swimming, and dog-sled racing. It is a week of fun and jollity.

The Totem Pole Golf Tournament held at Jasper, and the Prince of Wales Tournament at Banff are other annual sports attractions which draw top-ranking players from all parts of America.

The Calgary Stampede is Canada's rodeo. The events which take place during this week of celebration recall the old ranching days in Alberta. The ranch hands show how



Calgary Stampede, Alberta, Canada

Broncho busting at Calgary Stampede

wild horses and cattle were tamed, and how calves were roped for branding.

There are chills for the spectator and spills aplenty for the riders during the broncho-busting contest. "Ride 'Em Cowboy!" come the shouts from the crowd, as the wildest horse that can be found in the country tries to unseat his rider.

Roars of laughter are heard when the wild steers, bound they will not be ridden, do everything but stand on their heads in the bareback riding race.

It is fun to watch a wily calf elude its pursuer and slip through the twining circle of the lariat. "So Bossy!" someone shouts when the wild cows kick and switch the milkers with their tails in the milking contest, but perhaps the most fun of all is the Chuck-wagon Race. The wagon has to be loaded with all kinds of contraptions: tents, camp supplies, tin pails, cooking utensils and even a stove, then drivers thread a maze of obstructions before setting out on the course. Many mishaps occur before the winner of this event is acclaimed.

OTHER ATTRACTIONS

Elk Island Park in the parklands of Alberta is another of Canada's national parks. It is a beautiful area of lake and woodland, the home of over a thousand head of buffalo and the resting place and breeding grounds for numbers of wild fowl. Wood Buffalo Park, north of Peace River, is another preserve for buffalo.

Throughout the province there are many other parks and lake resorts where there are sunny beaches, good boating, and fishing. There are many historic sites where cairns and tablets have been erected to commemorate important events in the early days of the province. Expert canoeists who thrill to adventure may paddle and portage over the same routes as the fur traders, and for those who long for life in the open, there are "dude" ranches, where, with cowboy guides, they may ride over the ranges.

BIG GAME AND GAME BIRDS

Among sportsmen, Alberta is known as the home of big game and game birds.

In the lakes and in the marshy country, ducks of many varieties and numerous geese are to be found. Ducks flock to the fields of stubble after the grain is cut.

In the northern part of the province, at the west end of Lake Athabaska, there is an area of marshy land about 50 miles square where geese and ducks collect in the fall. This

Elk in Jasper National Park, photographed at night

Alberta Department of Agriculture Photograph



is the main gathering ground for the Canada goose and the snow goose before they honk their way south for the winter.

Prairie chicken, ruffed grouse, and Hungarian partridge are to be found in the more wooded regions.

Big Horn Sheep are found in various mountain regions from Waterton Lake to within 100 miles of Peace River, and mountain goats are in the upper reaches of the mountains.

Woodland caribou are found from the Athabaska River north through the foothills and mountains to the boundary.

Because their numbers are becoming fewer, limited shooting only is allowed.

Elk or wapiti, the finest of all the deer, found mostly in the Pembina-Brazeal Reserve where they have been protected by a closed season for several years. Now, as their number has increased, a few shooting licenses are allowed. Only bulls with ten points may be taken.

Mule deer, the large-eared species of deer, are found in the foothills and mountains from Waterton Lakes Park to the northern boundary.

Moose, the largest of the deer family, are in remote areas north of the Calgary-Banff line of the railroad.

Grizzly and black bears roam over a wide range. They are difficult to hunt in the fall when they feed on roots and berries deep in the timber. The spring is the best season for hunting this game, for then they come out farther for their earliest food supply.

Fossil hunters find good hunting in Alberta. The Bad Lands of the Red Deer Valley are a great storehouse of the fossil remains of prehistoric animals. Here may be found the remains of animals which, geologists tell us, must have lived at least 50 million years ago.

TWENTY SAFETY FIRST RULES FOR CAMPERS

On the Trail

- 1 Do not sit nor lie on bare ground. Sit on your hat and go bare-headed.
- 2 Carry two waterproof match boxes, one full of salt and one full of matches. Keep these in reserve.
- 2 If your horse won't drink water, don't drink it yourself. A dog will drink dirty water, a horse won't.
- 4 If thirsty and without water, put a small stone or button under your tongue, it will keep your mouth moist.
- 5 If going any distance, do not rely on an electric flashlight. A good light or "bug" can be made from a card pail or jam tin with a jagged hole in the side to hold a candle. The handle should be fastened lengthwise of the tin directly above it.
- 6 Carry a jack-knife with two strong steel blades, a can-opener, and a file.
- 7 If lost, find a stream and follow it down. It will usually lead you near to habitation.
- 8 Two heavy lumberman's shirts are warmer and more comfortable than a sweater and coat.
- 9 Wear large shoes with hob nails, a thin pair of socks, soaped at the heels on the inside next the feet, and over these a heavy pair of woollen socks. This will prevent blisters.
10. In crossing logs, keep your eye on the log, not on the water below. Test the bark first to see if it is loose.
- 11 If you fall into the water, no matter how cold it is, take off your clothing, wring it out as dry as possible.

and put it on again. You will be warmer afterward and avoid colds or worse ills

About Camp

- 1 Unload all firearms as you come into camp
- 2 Keep all your tools sharp. A small pocket stone is handy for touching up knives.
- 3 Don't forget your sewing kit. It should contain safety pins, needles, thread, darning cotton, buttons, wax
- 4 Keep all your extra matches in a large bottle
- 5 A well-soaked cloth wrapped around a bottle will keep it cool. Hang it in the breeze in the shade
- 6 A little vinegar boiled in water in your pots and pans will take away the smell of fish
- 7 To keep ants away from rations, set a box on four sticks that stand in tin cans or saucers full of water
- 8 If your boots are wet, scrape away some hot dirt or sand from under the fire and fill them with it. They will be dry by morning
- 9 Don't neglect your cooking. Take time to prepare at least two good meals a day
- 10 Do not leave a dirty camp. It should be cleaner than your home. Crumbs dropped on the ground do not show as they would on a floor, but flies and insects will find them. Destroy all refuse by burning. Don't pollute the woods

From Campcraft and Woodlore

A Canadian National Wildlife Publication

Alberta Makes Good Citizens

HELPFUL, INTELLIGENT CITIZENS

EDUCATION is free in Alberta, as in all Canadian provinces. There are many types of schools throughout the province. Churches, libraries, and night classes extend the work of education outside the school.

In the classrooms throughout the province, boys and girls work together on co-operative enterprises, mastering the skills needed by all citizens, and increasing their knowledge, thus learning to be helpful, intelligent, self-controlled citizens.

The University of Alberta provides further education for citizenship. It has a fine Medical School and the only Dental School on the prairies.

Technical Schools, Air Craft, and Business Schools provide specialized training.

Agricultural Schools at Olds, Lacombe, and Vermilion educate boys and girls for life on the farms.

Indian Residential Schools take care of the Indian population.

The Correspondence Branch of the Department of Education sends instruction by mail to numbers of people in outlying places.

The Banff School of Fine Arts, which meets every year in the mountain resort, gives instruction in the arts of weaving, designing, pottery and modelling, as well as instruction in art, the dance, the drama, language, and music. This

school not only serves Alberta citizens but it draws students from all parts of the United States, Mexico, and Canada.

As the schools are becoming better equipped with libraries and visual aids, children are able to help themselves a great deal to broaden their information. The cities have good libraries of books, magazines, and musical recordings, which everyone may use.

In Edmonton, a travelling library serves those parts of the city not so closely situated to main libraries.

HEALTHY, HAPPY CITIZENS

Alberta provides health services through its many hospitals, health institutions, and health clinics.

Travelling clinics operate through the summer months in outlying districts. Free treatment for tuberculosis is provided at the Keith and Cammell Sanatoriums, and crippled children are helped by the Junior Red Cross.

Through the schools there is dental service and serum treatment free. Milk and vitamins are provided, and advice given by nurses and doctors.

All cities have pasteurization plants and all dairies and creameries are inspected regularly, as are the dairy herds of the farmers.

In the Research Laboratories the cause of disease and the habits of crop-destroying pests are being studied and ways and means of combatting these enemies are being practised. The spraying of crops from aeroplanes is being carried on successfully.

Special attention is being given to the disease known as Rocky Mountain fever.

With more land being ploughed up and with improved methods of irrigation and disease prevention, mosquito-breeding sloughs are being cleared up.

Public playgrounds and swimming pools may be enjoyed by all, and through the aid of co-operative citizens, boys and girls of all classes are given camping holidays.

The citizens of Alberta, like those of all the other provinces of Canada, govern themselves. Through the members chosen to represent the people, Alberta's citizens make their own laws and decide how the money needed for running provincial affairs will be spent.

The elected members of Parliament meet in the assembly room at the Parliament Buildings in Edmonton to speak and act for those who elected them.

The Chairman of the Assembly is called the Speaker. The Sergeant-at-Arms maintains order. When the Speaker enters the Assembly Room, the Sergeant at Arms, in his official robes, precedes him, bearing the mace. This is a gilt rod ornamented at the end with a crown. It is the symbol which represents the voice of the people, and gives the members the power to speak and act for them.

All citizens nineteen years or over, who are British subjects, are entitled to vote on Election Day. It is the duty of all good citizens to exercise this right.

Co-operation (Working Together)

IN YOUR STUDY of Alberta, your class may have formed committees to carry out the activities you planned in your enterprise. If this was so, then you all helped your committee. You each contributed your ideas, your particular talent for drawing or constructing or dramatizing, or whatever you felt you could do well. You may have brought materials to help in the project your committee undertook to carry out. In other words, the members of your class "pooled their resources".

To get things done you appointed conveners, that is, a directive body. They managed the business and, with the help of all the other members, judged the quality of the work done and kept it up to a high standard.

When the enterprise was finished, you found a big job had been done. Through reports, displays, and culminating activities you shared with others what you had learned. You all gained by working together, and shared in the benefits.

In much the same way you may, on your school grounds, have provided a rink where you play hockey or shunty. You joined together to organize a club. You appointed a managing body who directed operations. Those who could, brought tools, and all took a hand at shovelling away the snow. Perhaps each of you contributed some money to buy sticks and pucks. You put together your money, your labour, your tools, that is, you pooled your resources. When all was completed, you had a good rink, a good outfit, and you all

shared in the fare. This suited you much better than having the rink owned by a few, whose only interests might have been in making profit from those using it. The rink was owned, directed and operated by those who were interested in using it. They shared equally in the benefits.



Ayrshire yearlings or Red Deer, 1946

Pooling resources and working in co-operation has proved to be a good way to carry on many business enterprises.

People engaged in the same kind of work join together, through a directive body, operate their own business, share the costs and equalize the profits.

The grain growers of Alberta have joined together to form a Wheat Pool. They own elevators along the railway, and all the members of the Pool store their wheat in these for marketing. The cost of handling and shipping is paid by charging each member of the Pool a small amount per bushel. Instead of each farmer judging the best time to sell his grain to make a profit, the directive body looks after



Alberta Products, Edmonton

Alberta Products

this business. All members receive the same price, and profits are fairly distributed.

Members of the United Grain Growers' Association may also buy supplies, such as binder twine and wire, through their organization. This is a saving to the members because the Association buys directly from the wholesaler.

Seed Clubs are organized to improve the quality of grain, and all growers benefit because a higher grade brings a better price. In 1947, members of a Junior Thatcher Wheat Club organized at Spruce Grove, received four bushels each of seed grain at a low price from the Wheat Pool. The following spring they planted it on clean summer-fallow or breaking. The yield was big enough to plant several acres the next year. The boys elected a President, Vice-President, Secretary, and Club Leader to direct their co-operative enterprise.

Growers of livestock have also formed associations for improving the quality of their stock and for marketing their products.

Boys and Girls' Calf Clubs operate their business and market many fine animals through fairs which are held annually. The winner of the Baby Beef Competition receives a high price for the prize animal.

Furs, wool, and honey are other products which are controlled and marketed through associations formed by the producers.

Workers in many trades have joined together to secure better working conditions and higher wages.

In rural communities, people join together to build a badly needed road, or a hospital, or a dam to get water for their stock and their crops. By sharing the cost, paid in the

form of taxes, people living in cities and towns have protection against fire, theft, and traffic accidents. They have water, light, and power in their homes, and transportation by street-car or bus, as well as hospitals, schools, libraries and recreation centres. None of these services could be enjoyed without co-operation. By obeying the laws and helping to preserve the property they own in common, citizens further co-operate with the body they elect—mayor, council and school-board—to direct and manage the business of the community for them.

Governments join together, too, as the Dominion and the Alberta Governments have done, to carry out a large irrigation project in the southern triangle of the province. This enterprise is certain to pay rich returns in a variety of products for Alberta, and in a larger export trade for Canada.

The co-operative way is being practised in education, too. Small school districts are uniting to form large divisions. Larger, well-equipped central schools are taking the place of the small school houses. Dormitories provide accommodation for pupils attending from a distance, or buses carry them back and forth.

All the districts served share in the cost, and all benefit, for the large, well equipped schools provide rural pupils with the same opportunity for education as do the urban centres.

Alberta has led the way in this co-operative enterprise. These large school divisions were the first of their kind in Canada.

By working together, Alberta people enjoy many conveniences and services not otherwise available. Wealth and opportunity are more fairly distributed, and life is made more pleasant for all.

Conservation of Wealth

A SURPRISE TREASURE BOX

"SURPRISE! Surprise!"

Have you ever exclaimed these words as you handed over to someone something which they later treasured very highly?

That is just what Nature has done for Alberta—presented her with a surprise treasure-box. Although Alberta has possessed such a treasure for a long time, her people are only now beginning to discover the number of treasures the box contains, and to appreciate their value.

Alberta's story has been a series of surprises. The first white men were surprised to find in the wilds of the West, not gold and jewels which former adventurers were seeking, but a source of wealth far greater, the furs which led to the profitable fur trade. The homeseeker was surprised to discover the richness of the soil, which made Alberta a great agricultural province. The settler was surprised to find, beneath the rich, life-giving soil, fuel and building materials. The prospector was surprised to find not only an abundance of mineral wealth, but also within and near provincial borders, new and unheard-of ores, and riches of amazing force and power. The research worker is surprised to discover the many new products which can be made from the treasures in Alberta's wonderful surprise-box. And so it goes on, the surprises never complete as long as her people continue to work and experiment.

With the supply of coal and water power which Nature has provided it now remains for the worker or industrialist to use more of this wealth in the production of goods, and so make Alberta's name known as a producer of manufactured goods as well as of agricultural products.



The result of wind erosion

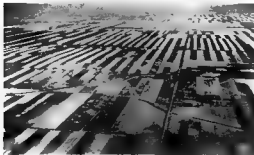
TREASURES IN TRUST

All the treasures that Nature has provided are given in trust. The people are their guardians. They can use them, but they must make them serve many people, and last for a long time.

When people are told that there is enough coal in reserve in Alberta to last for four thousand years, there is danger that they may squander this wealth without getting full use of it. Coal not only makes good fuel, but already over 100

products have been made from it, and, as research goes on, still other ways of using it will be discovered.

Other treasures, too, like the soil, the forests, and the oil, can be lost, worn out, or used up too quickly. The water supply can be allowed to run away uselessly, and wild life



An view of strip farming

can become scarce or cease to exist, if it is not protected from wasteful use. Caring for these treasures and making wise use of them is called *Conservation*.

CONSERVING THE SOIL

Alberta's rich soil has been a long, long time in the making, but this, the most valuable of all her treasures, can be easily lost in a few years by mismanagement. It can be worn out by continuous planting of crops which use up all food materials. It can be tossed about and swept away by the

wind, from the field where it is needed, and it can be washed away by running water, leaving the fields barren and full of gullies.

To prevent wearing out the richness of the soil, farmers rotate their crops. Sometimes they plant crops like clover and alfalfa which have, attached to their roots, little nodules that contain plant food. A crop of this kind planted every third year puts food back into the soil. Sometimes the farmers plough under green crops and leave the field idle for a year to recover its fertility.

Strip farming and the planting of trees to form shelter belts help to prevent soil drifting.

In some places where winds do continuous damage, the area is allowed to go back into ranch land.

To prevent the water flowing away in rills and trenches, farmers sometimes plough across the slope of the land. This is called contour ploughing. Because the furrows lie across the slope, the water does not flow away carrying off the top soil. Instead, the water is held and absorbed into the soil.

FOREST WEALTH

Trees, like people, can not thrive under poor living conditions. Where there is overcrowding, and where they can not get their share of sunlight and food, they grow weak and thin. Finally they are crowded out by their stronger neighbours. Like people, trees suffer from accident and disease. High winds and sleet storms damage them. Rust attacks leaf and stem, and pale-looking growths, called fungi, attach themselves to the trunk of the tree. Called by such fantastic names as "fairy tables", "bears' dens", or

whatever, these growths are really lazy plants or "poly-pores", which do not make food for themselves. They send their long fibres into the heart of the tree, and live on the food the tree has made.

Multitudes of insects make war upon the forests. In the larval stage, they bore into the bark or strip the tree of its leaves. In 1929 the poplar groves were left bare by a scourge of caterpillars. Tamarack trees have been damaged by the sawfly. The spruce beetle does much harm to the spruce in the Eastern part of Canada. Although it has not yet infested western forests, a close watch is being kept to prevent its spread.

What a host of enemies! And there is little the trees can do to help themselves against their attacks. What can people do for these good neighbours? They will repay us abundantly for any care given them.

We can protect them and help them to grow strong and sturdy. We can see that they receive first aid when they need it. Tree doctors can remove growths of fungi and apply a healing antiseptic. When rust and insects attack them, we can rid them of these pests by spraying them. This treatment may be given to the trees about our homes and in our gardens, but the trees of the forest need our care, too. The greatest enemy of our forest friends is man himself. To satisfy his needs, he chops and saws them down faster than they can grow. Fire, the chief scourge from which they suffer, is also due to man. For every tree that insects destroy, winds uproot, or men cut down, another is killed by fire.

Forest fires are started in various ways. They are caused by sparks from a railroad engine, brush fires, or camp fires, but more frequently they are caused by thoughtless people

dropping lighted matches or cigarette stubs. In dry summer weather, the forest floor of crisp leaves and twigs bursts into flame as easily as gunpowder. The branches of pine and spruce catch the flames and the fiery mass of under-leaps on and on through the heart of the forest, making the air for miles around pungent and dark with smoke.



An Alberta Beauty Spot

In a forest are millions of dollars' worth of timber is consumed, but this is not the only loss. The wild life, sheltered by the overhanging greenery, by the thickets and dens and by the carpet of earth and leaves covering the roots, is also destroyed. Acres and acres of land are thus put out of production. We lose the timber, furs, and the game for years to come.

Even field crops suffer. The spongy forest floor no longer soaks up the rain and the snow, releasing the water gradually to keep a steady flow. The streams flood the plains in the

springtime and dry up in the summer, leaving the land without the moisture necessary to the crops. All the beauty which adorned a large section of the country with colour and life becomes, in a few hours, a desolate scene of scarred and blackened ruin.

To save the forests from such destruction, the Alberta Government asks lumbermen and campers to take great precaution. Tourists passing through the forests and parks are asked not to light cigarettes. Railroads provide screens to cover the smoke stacks of their engines. Forests rangers are employed to prevent fires. Some rangers travel lakes and rivers in canoes to see that lumbermen and miners obey forest laws. Others circle the country by plane, on the look-out for trouble. In mountainous parts, control towers are built. From the top of a tall tower the fire ranger can watch a wide range of timber. By telephone or radio he summons help, and soon men and pumps are hurrying to the spot by canoe, train, or plane. A small blaze may be put out, but once a fire is well under way, the only thing that can be done is to put out the smouldering remains and hope for rain.

To clothe again the burned out areas and renew the forests where growth has become thin, young trees must be planted. Where this is done on a large scale, it is called *reforestation*.

In nurseries and on experimental plots, trees are grown from seeds. When the seedlings are two inches high, they are transplanted. After about two years, when they have a ten-inch stem and a ten-inch root bundle, they are ready for shipment. Communities and farmers may secure these baby trees free of charge.

Farmers, too, are planting trees for shelter belts, to prevent soil drifting, to hold moisture in the soil, and to beautify the grounds around their buildings. More and more trees are being planted for shade and adornment on the streets of Alberta's towns and cities.

Fire fighters do great service in stopping the spread of fires, but citizens can be of even greater service by preventing fires. All people should make it their slogan to *PROTECT OUR FORESTS AND KEEP THE PROVINCE GREEN.*

CONSERVATION OF WILD LIFE

There is, in Alberta, a large area of unbroken land which is considered non-productive because it is not suitable for raising farm crops. It is muskeg, marsh, and rock. Another area is forest land, which people are apt to consider valuable only for timber. Yet these two areas, together with Alberta's water area, if wisely managed, will yield a rich harvest of game, furs, and fish.

Since the invasion of these rich lands by the white man, the number of game animals and birds has become few, because of over-trapping and over-hunting, and because their usual haunts no longer provide a natural home or habitat.

For a time, beaver became so scarce that the Government had to prohibit the trapping of them. The marten and the fisher, two of Alberta's highly-prized fur-bearers, became almost extinct. Because of the draining of marshes and sloughs, muskrats were forced from their homes and numbers of wild ducks and geese died. Where the land has been cleared, the moose, deer, and elk are seldom seen because

there is no protective cover. With the increase of export trade in fish, and because, in places where dams have been built, the water is no longer fresh, fish are no longer plentiful in lakes and streams.



Watson's hyacinth in shallow lake

Photo by Wang Shidong

More attention is now being given to wild life population, not only because game birds and animals are a valuable source of wealth, providing a living for a number of people and attracting tourists to the province, but also because of the interest the wild folk hold for many people who would rather take a camera shot of them than hunt them for sport or gain.

Our national parks and game preserves provide safety for wild life of various kinds. Here they can be observed in their natural state. In Alberta's game and bird sanctuaries, hunting and trapping are not allowed. Even cats and dogs are forbidden.

Government laws require all sportsmen to secure licenses, to shoot only in season, and to fish only in specified waters. The number of animals and fish that can be taken is limited. Hunting by aircraft is not considered sporting, and measures are being taken to prevent it.

By studying the way they live, the habitat of wild-life neighbours can be restored. There must be suitable places for them to make their homes, and cover where they can feel safe and secure. For plant-eaters there must be plant food, and for flesh-eaters, enough smaller animal life on which they can prey.

Deer like to live in an area where there is young growth. This provides better cover than the forest trees and they can feed on the tender branches.

Prairie chickens prefer a tangle of underbrush and an open space which they can use as a dusting and sunning ground.

Beaver make their own cover, but they must be assured of a water supply near a bank where poplar is growing. The beaver population is now increasing, through the establishment of beaver reserves.

Muskrat marshes are being restored and the numbers of these valuable animals are increasing. Dikes and dams are being constructed to flood low-lying areas and hold the water at suitable levels, thus assuring wild fowl of a water supply. "Ducks Unlimited", an organization which has taken over the work of restoring breeding places for ducks, has brought many wild fowl back to their former haunts. By such wise management, Alberta's wild-life population is increasing yearly.

As we become better acquainted with the wild folk of our neighbourhood, we find that they all have an important work

to do in Nature's scheme of things. How they are fitted for carrying on this work is an interesting study.

CONSERVATION OF OIL

Alberta's treasure of oil was not regarded very highly by the first settlers in the province. It was used only for greasing and lubricating. Now refineries are separating the oil for use in the manufacture of many useful products.

With so many new wells coming into production, and with oil so necessary for keeping Canada's wings and wheels going, there is a temptation to take great quantities of this liquid wealth from the supply in Alberta's treasure house.

But the government wishes to keep some in reserve and not use it up too quickly, so it regulates the daily output according to the capacity of the well. With this precaution, and with more and more sources being discovered, it is hoped that the supply can be made to serve people's needs for a long time to come.

CONSERVATION OF WATER SUPPLY

Within a triangle in the south-eastern area of Alberta, there are 45,000,000 acres of thirsty soil requiring water, while rivers flow uselessly by on their way to the sea. The soil is rich in plant food, but there are times in the growing season when the sun beats down on the crops day after day, week after week, with no rain. The farmer can do nothing but wipe his brow and watch the crops wither. He is always worried. Rainfall averages only 8 to 16 inches in this area. In every ten years he can expect one bumper crop, two good ones, three average, and four failures.

Within this same triangle there are 450,000 acres of irrigated land where the farmer is not worried. Man has controlled the rivers and diverted the water to the parched fields. He has been abundantly repaid. This area can not be surpassed anywhere for the quality and variety of food products.

What has been done in this area, the Dominion and Provincial Governments together plan to do on a much larger scale, making four times as much land independent of rainfall.

The scheme is to cost \$250,000,000, and it will require ten years to complete. Rivers now serving no useful purpose will be dammed back, the water stored up in artificial lakes or reservoirs behind the dams will be directed off by means of canals and ditches, to the farms in the dry area.

The four rivers to be brought under control are

1 *The St. Mary River and its tributary, the Waterton*

A dam will be built across the St. Mary and another across the Waterton River, to form a lake 17 miles long. The water stored up from this lake will irrigate 345,000 acres.

2 *The Milk River*

The waters led off from this river when a dam has been built, will serve an equally large area.

3 *The Bow River*

A dam has already been built across this river 30 miles below Calgary, storing up water in Lake McGregor Reservoir. This lake and the system of canals is to be enlarged, bringing more acres within reach of the life-giving ditches.

4 *The Red Deer River*

It is planned to build a dam across this river below the city of Red Deer to irrigate 500,000 acres.

As well as supplying the need of the soil in the dry areas, the stored up water may also be used to make electric power.

When plant life and shrubs begin to grow on the irrigated land, game birds such as ducks, geese, and pheasants will be attracted there by the protective cover, and land that was once empty prairie will house this wild life.

The project may serve yet another useful purpose, that of providing recreation grounds for thousands of residents.

These are some of the benefits which come from the conservation and control of the water supply.

CONSERVATIONISTS ALL

There are many ways in which we may all be conservationists by using wisely the gifts Nature has given us, and by protecting and preserving our neighbours of the plant and animal world.

Every year our feathered friends come back to us and make their homes among us. They seem to like human company. They bring us cheer and brightness, and save us tons of food which would otherwise be lost to ravaging insects. We can make them welcome by planting trees for sheltering them, and by providing bird homes. We can prevent their being frightened by cats or other pets. We can also share with them some of our food, and provide feeding trays for them.

In meadows along the roadsides, and in the woods, many shrubs and wild flowers blossom. When their blooms are picked in great quantities by flower-lovers, they wither and die, enjoyed only by the few. Left growing, they adorn the landscape, they are enjoyed by many, they last a longer time.

and people get full use of them. With a little thought and kindly care, all can be guardians and conservationists of the beauty that Nature has lavished upon us.

Seven sensible maxims for us to remember if we seriously wish to do our part towards conserving our natural wealth, are those given by Marie F. Gaudette, Programme Director of Girl Scouts. They may be called

THE SEVEN TRYS OF A CONSERVATIONIST *

- 1 Never needlessly or heedlessly to destroy any life, either plant or animal
- 2 To learn how to build and handle outdoor fires, so I will not cause a forest fire
- 3 Never to leave any part of the out-of-doors littered with papers, cans or garbage
- 4 To respect the home of any living thing
- 5 To learn more about the out-of-doors
- 6 To consider all forms of wild life with respect due them for the work they do
- 7 Never to forget that I am a steward of all I survey

*From *Canadian Nature*,
Sept.-Oct., 1947.

Some Alberta Birds

1 *The House Wren*, the chattering bird with the up-swept tail, is a general favourite. Jenny Wren is neat in appearance but untidy in housekeeping habits. She fusses and fumes about with great energy, bringing in twigs and bits of this and that to furnish her house, and throwing out everything that Father Wren may have collected.

Wrens are very jealous birds. They will not permit another pair to nest too close to them, so there should not be more than one wren house in your garden. Build it from 6" to 8" in depth, with an entrance hole 1" in diameter so that the sparrows cannot get in. The hole should be about 4" or 5" above floor level and the floor space about 4" square. Fasten it firmly to a tree or post 6' to 10' above the ground.

2 *The Purple Martin*, the largest of Alberta's swallows, is a social nester. Place the apartment house you build for these friends in an open space well away from any trees, where they can perform their acrobatic stunts. You may make as many compartments as you like each about 6" x 6" x 6". The entrance hole should be $1\frac{3}{4}$ " in diameter, and protected by overhanging eaves. Place the house from 14' to 20' high, where the colony will feel secure.

3 *The Tree Swallow* is the first of the swallow tribe to reach Alberta in the spring.

These birds are a steelly blue-black with shimmering colour-changes on the head and back, and an immaculate

white below. They have a swift darting flight, and a joyous twitter. They like to live near water where they can skim the surface in their chase for insects.

Their house should be a single compartment about 5" x 5" x 5" with a $1\frac{1}{2}$ " entrance hole.

In the fall, all the swallows—tree, cliff, bank and barn—have a habit of gathering in enormous flocks, in preparation for their flight south.

4. *The White-Throated Sparrow*, the sweet-voiced songster, loves Canada. It sings, 'My dear Can-ada, Can-ada, Can-ada'" over and over again.

The male is a reddish-brown-backed bird with black and white stripes over the crown of the head and with a yellow spot in front of the eye. It has a grey breast with a white throat. The female is duller in colour, with a small white spot on the throat.

It is often seen in spruce trees and in the evergreen national parks.

Its nest is a deep cup lined with soft grass and hair. It is usually concealed in moss or under a bush.

5. *The Clay-Coloured Sparrow* is not so good a singer as the white-throat. Its "Cree-cree-cree" is all on one note.

It is a light brown, with brown and grey stripes over the head, and a brown patch on the cheeks with dull white under parts.

Its nest, a neat little structure of fine grasses lined with finer grasses and hair, is built on the ground. The cowbird frequently lays eggs in it.

6. *The Slate-Coloured Junco* is a friendly little bird of the sparrow family. It is drab slate colour with white underneath, and it has white outer tail feathers.

It has a wide range of notes, trills, tinkling twitters, and curious tut-tuttering calls

The nest of this bird is built in tufts of grass or moss, or behind roots in jackpine or spruce country. Juncos feed on weeds, seeds, and harmful insects

7 *The Least Flycatcher* is the smallest, tamest, neatest, smartest, and noisiest small bird in Alberta

Its dress is plain drab-olive above, and it has a dirty grey breast and two dull whitish wing bars

Its nest of plant-down and horsehair and feathers, decorated outside with spiders' webs and cocoons, is camouflaged to resemble the bark of the poplar in which it nests

With neatness and dispatch, it snatches off hosts of flies and mosquitoes from tall trees, low bushes, or grass tops

8 *The Yellow Warbler* is a friendly little bird which nests in the settled parts of the prairies, about farms, in the suburbs of towns and along lakes and streams

The yellow male has fine red streaks on the breast. The female lacks these and is greenish on the back and not so bright a yellow on the breast

It should not be called the wild canary, because it is not a good singer. There is no melody to its song, although it is called a warbler

Its nest is a beautifully neat structure of plant-down and fine fibres lined with slender grasses, long hairs, or soft strips of the inner bark of trees. Usually it is found in the crotch of a bush or in a poplar sapling

The warbler is one bird which has learned to outwit the cowbird. Although it has even been seen sitting on the back of a husky cowbird nestling, doing its best to satisfy the appetite of this strange baby, usually it buries the enemy egg

by building a new bottom to its nest, over the egg, so it can not hatch. As many as three storeys have been found in this clever bird's nest.

9 *The Cowbird* in early days was called the buffalo bird because it was seen in company with the buffalo. To-day it travels with cattle and horses.

The flies which torment the animals are stirred up out of the grass and are snapped up by the birds. The birds may often be seen perched on the backs of the cattle.

The male bird is a glossy black with shiny chocolate-coloured head and neck. The female is duller and dark brown all over.

Their bad habit of laying their eggs in other birds' nests makes these birds disliked. When the young cowbird hatches, it grows very quickly into a sturdy youngster, and if the other eggs have not been already carried off or thrown out, the smaller nestlings are pushed out of the nest or starved, for the young cowbird has an enormous appetite. As many as five cowbirds' eggs have been found in one nest for the owner of the nest to care for.

10 *The Robin*, the bird we welcome as the true harbinger of spring, is really a thrush.

When the first settlers came to this continent from England, they called this red-breasted bird, the robin, because it reminded them of the robin red-breast in their old home. Everyone knows its song, "Cheer-up! Cheer-up! Cheery, cheery, be cheery."

11 *The Bluebird* we sing of as the bird of happiness. This beautiful bird makes its nest in a hole in a telephone pole or in a fence post. It can sometimes be induced to occupy a bird house. Its song is soft, melodious, and friendly.

Alberta is lucky to have both the eastern and mountain species. The eastern bluebird has a chestnut red breast. The mountain bluebird is pale blue on the breast and white underneath.

12. *The Meadowlark* is easily recognized by a crescent of black on its bright yellow breast.

It is one of our cheeriest songsters. Its rich mellow song may be heard soon after the snow disappears.

13. *The Lark Bunting* lives on the wide open prairie. It sings as it soars into the air from a clod or stone, bursting into a rapture of melody at a height of about twenty feet, before fluttering down to the place it left a moment before.

The male is black with a large white wing patch, the female is of a brown, sparrow-like colour, with a finely streaked breast. The bird also bears the name of *white-winged blackbird*.

A choral performance by these fine songsters is one of the never-to-be-forgotten joys of springtime on the prairies.

14. *The Red-Winged Blackbird* likes to live in many places. It nests in willows and reeds.

The male bird is black with red shoulder patches. The female is streaked and speckled. "King-ker-kee" is its song.

15. *The Cedar Waxwing* is a beautifully dressed, well-groomed bird. The upper parts are soft pinkish-brown in colour. The bird is pale yellow underneath, and it has a velvety black bar through its eyes. Its tail is tipped with yellow. It is easily distinguished by its tall crest, by the red, wax-like tips to the upper wing feathers.

The Cedar Waxwings are sociable birds, always collecting in flocks. Their call is a soft, wheezy lisp, "Tse-tse-tse." They are very fond of fruit.

16. *The Grosbeak* has a rich, pure voice something like that of a robin. The male is black above, with white on its lower back. Its breast is rosy red. The female is duller in colour, lacking the rosy breast. The heavy, thick bill of this bird is useful for cracking hard seeds on which it lives.

17. *The Flicker or Yellow Hammer* is easily recognized by the flash of golden underwing, and the white patch on the lower back.

Its call, "Flech-ah' flech-ah' flech-ah'" gives it its name. It is a noisy bird, always drumming away, chipping out holes from a poplar or, perhaps, a telephone pole. It is the homemaker for many birds. Even owls and flying squirrels have been known to take possession of the home he has drilled.

Ants are its favourite food. As many as 3,000 larger ants and 5,000 small ones have been counted in the stomach of one bird. The long tongue is barbed and sticky and can be protruded beyond the tip of the bill for twice the length of the bill. When these birds raid an ant hill, they mop up the ants and clear out the hill in short time.

18. *The Yellow Belled Sapsucker* is another bird of the woodpecker family. The male wears a crimson cap and cravat. The female has a white throat patch instead of crimson. They are a greyish-yellow underneath, with sides mottled with brown.

These birds sap the sap from trees which they girdle with small holes. The sap which wells up in the holes attracts flies, ants, butterflies and moths, and makes a dish much to their liking. Humming birds, too, are attracted to their sap-bar.

The paper birch and poplar are their favourite sap-sucking trees.

19 *The Crow* is liked by most farmers because he eats such large quantities of grasshoppers, cut-worms, and other pests, but he also eats the corn the farmer plants.

He is disliked by sportsmen because he steals the eggs of ducks and game birds.

Near sloughs and marshes where game birds nest, the Government allows these birds to be shot, and sportsmen's clubs give prizes for the destruction of the crows' eggs.

20 *The Bronzed Grackle* is sometimes called the *Crow Blackbird*.

Its black coat shines iridescent with purple and green, and its head, neck, and breast with steel blue.

It destroys the eggs and young of the house sparrow, and sometimes other species. About one-third of its food is insects.

21 *The Belted Kingfisher* is an expert at fishing. You will easily get to know this bird. It has a double-pointed crest and wears a white collar and vest. The *belt* is higher up than a belt should be, and is more like a tie. It is slaty blue to match his coat. Unlike most female birds, the mother bird of this species is the more highly coloured, and she has another band of cinnamon-brown across her breast.

From its perch on the bank, this bird plunges into the stream or pool with great speed, clutches the fish, head first, in its bill, flies to its perch and there it bats the fish against the tree or rock, and enjoys its meal at leisure.

22 *The Osprey* is an even better angler. This fish hawk grips the fish in its talons, one foot forward and one back. Sometimes the fish will pull the bird under the water, but it manages to keep a firm grip on its slippery prey, rises from the water and soars away. The pads on its feet, studded with sharp spines turned backward, help it to keep a firm

'grip. In the air, as it is being carried away, the fish looks like a pontoon attached to a seaplane.

This bird dreads one enemy. Sometimes the bald eagle worries the osprey in flight until it is forced to drop its prey. The eagle then catches the fish before it drops into the water.

Ospreys build large nests high up on a broken stub or in a crotch of a dead tree. Year after year they return to the same nest to which they add more sticks until it becomes so huge that a storm topples it over. Then they start building again.

Alberta's water fowl include such highly-prized game birds as — The Canada Goose, The Mallard Duck, The Canvas-Back Duck, The Pin-Tail Duck, The Blue-Winged Teal, The Green-Winged Teal, The Plover.

Other species not so highly valued by sportsmen, but interesting to all nature-lovers because of their peculiar characteristics, are. —

The Loon, The Shoveller Duck, The Ruddy Duck, The Blue Heron, The American Coot, and the Bittern. The name "Thunder-pump" has been applied to this last-named bird because of the sound it produces. In its neck it has a thick skinned sac which it inflates. The air gulped in to fill the sac is emitted with great force to produce the "Boom-ka' Boom-ka' Boom-ka'" which can be heard as plainly 300 yards away as at a distance of thirty.

Adapted from "Know Your Alberta Birds",

By B. W. Cartwright

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Place Names and Their Origin

SEVEN CITIES

Edmonton

Fort Edmonton, built in 1795 by George Sutherland, was named in compliment to his clerk, John Prudens, whose home was in Edmonton, England, not far from London.

The first site of the fort was on the north bank of the Saskatchewan River, a mile and a half above the junction with the Sturgeon River. Fort Augustus, a North West trading post, stood beside Fort Edmonton. Both these forts were destroyed by the Indians in 1808. New forts of the same name were erected farther up the river, where Alberta's Parliament Buildings stand to-day. After the two companies united in 1821, Fort Augustus was abandoned. The settlement which grew up around Fort Edmonton became the city of Edmonton.

Calgary

The name of this city was chosen by Colonel James Macleod when a N.W.M.P. post was established there in 1876. It was the name of the ancestral estate of his mother's family on the island of Mull, Scotland. The word "Calgary" is of Gaelic origin, and means "clear running water".

Lethbridge

This city was named after William Lethbridge, the first president of the North West Coal and Navigation Company. The town was staked out in 1885. Before that time, it was called Coal Banks.

Medicine Hat

According to legend, this city grew up around the place where a Blackfoot chief died of a broken heart. In a fight with some Crees, he lost his feathered head-dress, which he believed had the power to protect him from harm, and so was considered good medicine. When he saw it desert him and go floating down the river, he lost faith in its charm. In bitter disappointment, he fled to the Cypress Hills, where he died of grief.

Red Deer

The Cree name for the river on which this city stands was Waskatu (red deer). In trading post days a trail crossed the river three miles west of the present city. At this ford a trading post was built and a settlement grew up around it. When the railway connecting Calgary and Edmonton was built, the settlement moved to its present site.

Wetaskwin

The word in Cree means "hills of peace". It is said that it was in the neighbouring hills that the Indians tribes met at last to bury the hatchet. The city had its beginning in the year 1892, when the railway connecting Calgary and Edmonton was being constructed. It grew to be a centre of trade for the surrounding community.

Drumheller

This city owes its origin and name to the discovery of coal in the area. Ranchers and farmers mined the fuel for their own use. Most of the coal was taken from the Greentree Ranch. In 1911, Samuel Drumheller took over the ranch and extended mining operations. He and two others formed a partnership and shipped the first carload of coal from the district.

OTHER PLACE NAMES

Macleod

This town took the name of Colonel Macleod, who established the first N W M P post in the West. A cairn commemorates the arrival of the Police in 1874, "bringing law and order to a wild lawless country"

Fort Saskatchewan

The name comes from the Cree words *kishuska*, "rapid" and *aywaan*, "current", hence "rapid waters". The town grew up around a trading post erected there.

Athabasca

This is a Cree word meaning "where there are reeds". The town is situated on the delta of the river. The waters are shallow and marshy.

Jasper

The name is derived from Jasper Hawse, a clerk in charge of an early storehouse of the North West Company on Lake Brule.

When the North West Company was united with the Hudson's Bay Company, the storehouse was moved to what is now called Jasper Lake. The new building was called "Jasper's House". The Indians called the region "Glittering Mountains", but to the white man the tourist resort became known by the one word, Jasper.

A cairn was erected in the park commemorating the founding of Henry House by William Henry in 1811, Jasper House in 1827, and the public services of David Thompson, explorer and first white man to reach the region.

Index

A

Abasand, 104
 aged, home for 42
 air-road 1
 Alaska, 54, 62
 Alberta, early days, 3-6, 7, exploration,
 14 districts established, 17, province
 formed, 17, size, 58, population, 58
 70, boundaries, 58 altitude, 61 rivers
 and towns, 62-67 lakes, 68-69,
 growth of, 70-71 climate, 70; natural
 resources, 72-73, 90-107 education,
 126-127 health services, 127-128;
 birds, 148-155
 Alberta Gerben, 88
 alfalfa, 80, 89
 A. I. O. P., S. J., 33
 Alpine Club, 118
 apaches, 81, 109
 apples, 90
 Arctic, 17, 21
 Arizona, 78
 asparagus, 89
 asphalt, 104, 114
 Assembly, 128
 Astoria, district of, 77
 Assiniboin Indians, 16
 Athabasca, country, 19, 24, 26; district
 established, 17
 Athabasca River, 17, 19, 26, 61, 62-63,
 68, 91, 104, 123
 Athabaska, town of, 61, 101, 150

B

Baby Bief Competition, 132
 bacon, 109
 Bad Lands, 123
 Bad River, 22
 balancers, 108
 Banff, 17, 44, 69, 104, 119, 120, 123, 126
 Banff National Park, 113
 barley, 84
 Baroness, 96
 Barr, 51
 Barr Calgary, 51

Bassano, 79
 Battle River, 65
 bears, 80
 bears, black, 121, grizzly, 123
 beaver, 94, 141, 41
 bee keeping, 89
 beet sugar manufacture of, 110-111
 Belgium, 52
 Bella Coota River, 23
 berries, 80, 90
 beetles, 109
 Big Horn Sheep, 123
 binder, 87
 birch, 91, 92, 114
 bird sanctuaries, 142
 birds, 148-155
 bittern, 153
 bitumen, 104
 Bitumens, 104
 blackbird, red-winged, 152
 blackbird, white-winged, or lark
 buzzing
 Blackfoot, 117
 Blackfoot Crossing, 47, 49
 Blackfoot Reserve, 11
 Blackfoot Indians, 17, 24, 26, 30, 38, 39,
 40, 44, 42, 44, 47, 69
 Blackwater River, 25
 Blood Indians, 49
 blubber, 111
 Boston, 104
 Bow River, 24, 26, 43, 47, 49, 61, 66,
 79, 107, 143
 Brant, 99
 brick, 114
 Brian, 32, 112
 British Isles, 48
 Brooks, town of, 79
 Bruderheim, 51
 buckers, 91
 buffalo hunt, 16, buffalo meat, preserva-
 tion of, 30, hides, 113
 Buffalo Lake, 68
 building materials, 90, 113-114
 Bull Sale, Calgary, 77
 bullock, 91

Burns, Senator Pat, 74
bushland, 99
butter, 88, 109

C

"cage" 99
Calf Clubs, Boys' and Girls, 132
Calgary, 1, 40, 42, 47, 49, 66, 76, 77,
103, 123, 136, 137
campers, safety first rules for, 124-125
Cardell Santorum, 127
Canada geese, 123, 133
Canadian National Railway, 24, 33, 60
Canadian Northern, *see* Canadian
National Railway
Canadian Pacific Railway, 42, 52, 60, 96
canning, 108
carbon, 99
Card Bishop, 51
Cardston, 51, 66
caribou, woodland, 123
Carival, Winter, 119
carrons, 80
carls, 58, 74-77, 88
celery, 80
census, 113
cereals, 108
charcoal, 114
cheese, 88, 109
cheese factories, 81
cherries, 90
Chicago, 106
chickens, 89
Chief Trader, *see* Factor
Chimney, The, 64
China, 94
Chinook Indians, 71
chinook winds, 71, 73
chuck-wagon race, 121
Churchil' River, 17
cittenshop, 126-128
clay, 90, 105, 113, 114
Clearwater River, 17, 43, 64
clover, 89
clover hay, 80
coal, 17, 64, 67, origins, 96-100; anthra-
cite, 99; bituminous, 99, sub-bitumi-
nous, 99, yearly production, 100; 137

Coal Barles, *see* Leithridge
Coalpur, 99
Cochrane, 66
coke, 96
Cold Lake, 68, 103, 106
Collier, Frank, 77
Columbia ice fields, 63-64, 111
Columbia River, 24, 27
corkbark, 88
conservation (natural resources), 134-
147, appeal for, 146-147, rules for
147
Cooking Lake, 68
co-operation, 78, 129-131 marketing,
130-132 buying, 132, seed clubs, 132,
livestock 132, furs, 132, wool, 132,
honey 132 labor unions, 132, hos-
pitals, 132, rural communities, 132-
133 migration, 133 education, 133
coot, American, 133
corn, 80
Coutts, 67
Cow Town, *see* Calgary
cowbird, 131
creameries, 81, 88
Cree Indians, 16, 17, 26, 40, 37, 39, 40,
48-49, 157, 158
Cree Syllabics, 36
crosscut, 114
crops, grain, 73
crow, 154
crow blackbird, *see* grackle, bonnaz
Crowsfoot, 47, 48, 51
Crowsnest Pass, 40, 99
crystallizing, 111
crystals, 113
cultivator, 83
Cypress Hills, 44, 59, 137

D

dances, 88, 109
dams, 79, 107
deadfalls, 94
deer, 143
disk, 86
door sashes, 113
drill, 81, 86
drillers, 102

Drumheller, 67, 99, 137
 Drumheller, Samuel, 137
 ducks, 89, 143, mallard, canvas-back,
 pin-tail, shoveller, ruddy, 135
 Ducks Unlimited, 143
 Dunvegan, 62
 dynamite, 107

E

Edmonton, 1, 26, 39, 40, 54, 59, 65, 68,
 91, 98, 99, 103, 127, 128, 154, 157
 education, 126-127, 133
 egg production, 87
 egg-drying plants, 109
 egg-powder, manufacture of, 109, 112
 Elbow River, 43, 49, 66
 electricity, 107
 elevators, grain, 51, 130
 elk, 113, 122, 123
 Elk Island Park, 121
 Elk Point, 103
 Emerald Lake, 69
 England, 78
 Evans, Reverend Robert, 16-17
 Eskow, 111

F

Factor, 24, 30
 fallows, 92, 93
 farming, mixed, 84, 88; wheat, 84-88,
 poetry, 89; fur, 94
 feed mills, 61
 fertilizer, 91
 Fife, David, 84
 Fife, Red, 85
 "fingerlings", 104
 fir, 114
 fish hatcheries, 106
 fishing, 108
 Fitzgerald, 64
 flax seed, 108
 flocks, 133
 flooring, 114
 flour, 108
 flume, 110, 111
 flycatcher, nest, 150
 foothill country, 59

forests, 59, conservation of, 137-141
 Aspen, 137-138, spruce, 138, fir, 138-
 141, Forest rangers, 140; reforesta-
 tion, 140
 Forks Fort, 21, 22
 Fort Augustus, 26, 63, 156
 Fort Benton, 47
 Fort Calgary, 45
 Fort Chipewyan, 19, 21
 Fort Edmonton, 28, 10, 13, 17, 43, 47,
 48, 49, 64, 65, 96, 156
 Fort Fitzgerald, 20
 Fort Garry, 41, 43, 49, 50
 Fort Macleod, 1, 45
 Fort McMurray, 19
 Fort Pitt, 33
 Fort Prince of Wales, 8
 Fort Saskatchewan, 45, 65, 138
 Fort Smith, 20, 64
 Fort Vermilion, 26, 62
 Fort Whoop-up, 43, 45
 Fort William, see Grand Portage
 forts, see Trading Posts
 fossils, 123
 fox, 94
 Fraser River, 22, 25, 26
 Fraser, Simon, 25-26
 free land, 52, 78
 French Canadians, 53
 French traders, from New France, 10,
 11, 12
 fruit growing, 80, 89
 "fry", 106
 fur brigades, 8, 11-13
 furniture, 114, beds, springs, mattresses,
 chamberfields, 114
 furs, early influence of, 7, 72, 94-95

G

game, big, 122
 game birds, 122
 game preserves, 142
 garment factories, 113
 garments, 113; belts, caps, mittens,
 muckmaws, woolbreakers, leather bel-
 mets, aviation hats, dresses, sports,
 uniforms, overalls, hospital garments,
 sportswear, 113

Garnet wheat, 85
gas, natural 94, 101
gasoline, 103, 104, 114
Gay Lord, 77
geese, 89
Germany, 52, 79
Ghost River, 107
Glacier Park, 69, 14
glass, 47, 90, 114
'Glistening Mountains', 158
Goshawk Camp, 116
goats, mountain, 123
Goats Mirror, 69
goldenes, 106
government, 120
grain, hatched, 154
Grand Portage, 13, 19, 20, 31
Grand Prairie, 62
Grand Rapids, 41
gravel, 90, 105, 114
grazing, 74
Great Divide, 59
Great Slave Lake, 20, 21
Greentree Ranch, 157
grouse, 153
grouse, ruffed, 129
Guil Lase, 68
"gusher", 102
gypsum, 90, 91

II

hams, 109
hazelnut, 86
Hazel, 100
Hawke, Jasper, 158
Hayes River, 9
health services, 127-128, travelling
clinics, 127, tuberculosis, treatment
of, 127, dental service, 127, serum
treatment, 127, postcardization, 127,
milk, free, 127, vitamins, free, 127,
Research Laboratories, 127, Rocky
Mountain fever, 127
Heame, Samuel, 21
Henday, Anthony, 10, 15-17
Henry, Alexander, the Younger, 16
Henry, William, 158
Henry House, 26, 158

heron, blue, 155
High River, town of, 77
highways, 54, 114
hogs, production of, 48
homesteads, 52, 78
Horse Indians, 16, 17
Hot Springs, 119
Hudson's Bay Company, 8, 9, establish
inland forts, 10; typical fort, 11,
rivalry with 'pedlars', 12; rivalry with
North West Company, 13, 23, 24
union with North West Company, 27
40, 44, 52, 43, 158

I

ice cream, 109
Ice Lake, 7
India, 54, 83
Indian agent, 49
industry, 71, canning, 80, 108; meat
packing, 109, dairies, 109; spawes,
109, refining salt, 109; beet sugar
manufacture, 109, 110-111; egg pow-
der manufacture, 109, 112
irrigation, 54, 66, 67, 79-80, 81, 113
145-146
Irrigation District, Eastern, 79

J

Jasper, 63, 106, 119, 120, 158
Jasper Lake, 158
Jasper Park, 24, 26, 63, 91, 12
Jasper Park Lodge, 69, 114
Jasper-Banff Highway, 63, 64
Jasper's House, 158
jars, glass-coloured, 149
Jasper Red Capes, 127
Jasper Thatcher Wheat Club, 152

K

Kath Sanatorium, 127
Kenney, Henry, 8
kerosene, 104
Kicking Horse Pass, 60
kingfisher, belted, 154

L

Lac La Biche, 68

Lac Ste Anne, 40
 Lacombe, Father, 40-42, 51, 65, 86
 Lacombe, town of, 42, 48, 126
 Laird, Lieutenant-Governor, 48
 Lake Athabasca, 19, 20, 61, 64, 101,
 106, 122
 Lake Beauport, 69
 Lake Brule, 158
 Lake Edith, 69
 Lake in the Clouds, 69
 Lake Louise, 68, 69
 Lake Minnewanka, 69
 Lake McGregor Reservoir, 145
 Lake Pacowicki, 68
 Lake Watbanca, 58, 105
 Lane, George, 74
 lark hunting, 152
 larks, 155
 Leduc-Culmar, 102
 Legs, 14
 Lesser Slave Lake, 64, 105, 106
 Lethbridge, 1, 46, 67, 83, 96, 99, 108,
 116
 Lethbridge, William, 156
 libraries, 126, travelling, 123
 livestock, 90, 101, 113
 livestock, 84, co-ops, 152
 Lloyd, Bishop, 53
 Lloydminster, 53, 102
 London, 58, 93
 loam, 125
 Lord's Prayer (in Cree), 36
 Lorne, Marchioness of, 57
 Lorne, Marquis of, 57
 lumber, 113
 lumbering, 91-94
 lumberjacks, 92, 94
 lynx, 94

M

Mackay, Alexander, 21
 Mackenzie, Alexander, 19-23, 25, 26, 62
 Mackenzie River, 19, 53, 68
 Macleod, 49, 66, 77, 158
 Macleod, Commissioner, 45, 47, 156,
 158
 Macleod Sage, 1
 Magrath, 80, 121

malt, 108
 "Man of Good Heart", 40, 42
 manufacturing, 108-114; food products,
 108-112, clothing, 113
 Marquis wheat, 85, 86
 martens, 94
 martens, purple, 140
 meadowlark, 152
 meal, 108
 meat, canned, 109
 Medalla pottery, 1, 4
 Medicine Hat, 67, 96, 105, 1, 4, 137
 Methy's Passage, see Passage à Loche
 Midge, 61, 43
 Midnapore, 42
 Minto Hot Springs, 119
 milk, condensed, 88, 108
 Milk River, 61, 67, 145
 Milk River town of, 67
 mining, 96
 mink, 94
 missionaries, 15-42
 missions, 35
 Mississippi, 67
 Mistouri River, 67
 moosehide, 113
 molasses, 110, 111
 Montana, 43, 49, 55, 66, 74, 116
 Montreal, 12, 13, 27, 49, 112
 moose, 113, 125
 Morrisville, 55
 Morley, 38, 49
 Mormons, 55, 66
 moose, 114
 moss, 114
 Mount Ladroy, 69
 Mountain Park, 99
 mountain region, 60
 mule deer, 123
 muskrat, 94, 141, 143

N

Nanaimo, 77
 natural resources, conservation of, 134-
 147; need for, 134-136, soil, 136-137,
 forests, 137-142, wild life, 141-144;
 oil, 144; water supply, 144-146; ap-
 pended for, 146-147; rules for, 147

Nelson River, 10
 New France, 10, 12
 New Norway, 53
 New York, 79
 Noeddyg, 99
 North West Company rivalry with
 Hudson's Bay Company, 11, union
 with Hudson's Bay Company, 27 28,
 24, 45, 118
 North West Mounted Police, 45 48:
 arrival, 45 work 45, 46; become
 Royal North West Mounted Police,
 46, become Royal Canadian Mounted
 Police 46, 66, 116, 156, 158
 North West Passage, search for 19
 North West Territories, 17, 59, 64
 Norway, 52

O

oats, 84
 oil, 96, 100-103, crude oil, 103, pro-
 duction of, 103, oil sands 104 fac.,
 103, 104 lubricating, 103 Diesel,
 104; cokes, 103
 Okotoka, 77
 Old Man River 49, 65, 66
 Okla, 126
 Ontario, 78
 orphans, home for, 42
 osprey, 154

P

Pacific Ocean, reached by Alexander
 Mackenzie, 23, 26, 27
 packing, meat, 109
 parklands, 59, 64
 parks, national, 115-118, 142
 Parliament, 128
 Parliament Buildings, 156
 Pasamp River, 22
 partridge Hungarian, 123
 passes, mountain, 69
 Peace Parks, 69, 116
 Peace Point, 91
 Peace River, 21, 25, 26, 59, 61, 62, 68,
 84, 90, 103, 121, 123
 Peace River, town of, 22
 peas, 80

peat, 98, 114
 'pedlars', rivalry with Hudson's Bay
 Company, 12
 pelts, 95
 Pembina-Brassau Reserve, 123
 Pipet, Chief, 51
 Picardville, 53
 pickaxe, .03
 pickle factories, 81
 Pictures Butte, 80, 81, 109
 Pigeon Reserve, 49
 Pigeon Lake, 17, 48, 103
 pilot, 103
 pine, lodge-pole, 91, 92, jack, 91 92
 playing mills, 113
 planer, 91, 113
 plaster of Paris, 91
 plow, 151
 plums, 90
 Pond, Peter, 17-19, 20, 64, .04
 Ponoka, 65
 poplar, 91, 92
 Porcupine Hills, 49
 porcupine quills, 113
 Portage la Loche, 19
 poultry, 67
 poultry, 84
 powder monkey, 91
 power plants, 107
 prairie, 59
 prairie chicken, 123, 141
 "Praying Man", 40
 Prince Albert, 64
 Prince of Wales, 120
 Prudens, John, 116
 pulpwood, 94
 pumpkins, 80
 Pyramid Lake, 69

Q

Quebec, 11, 74

R

Radium, 119
 railway, coming of, 49
 Rap River, 102

ranches, 74-77, round-up, 77, chuck-
 wagon, 77, 78, branding, 78, broncho-
 busting, 78
 Raymond, 80, 81, 109
 recreation, 118-121, public playgrounds,
 122 swimming pools, 122
 Red Bobs 122 (wheat), 87
 Red Deer, 59, 67, 68, 83, 144, 157
 Red Deer River, 67, 79, 145
 Red Deer Valley, 123
 Red Fife, 87
 Red River, 46, 50
 Red River colony, 43
 Red River on-cart, 114
 Redcliffe, 114
 refrinaria, 103, 114
 Regent wheat, 87
 Rescue wheat, 87
 Reserves, Indian, 48
 Reward wheat, 87
 robin, 51
 rock-wool, 114
 Rocky Mountain House, 24, 26, 64
 Rocky Mountain National Parks, 46, 68
 Rocky Mountains, 11, 27, 58, 62, 67,
 91, 110
 Roman Catholic Church, 71
 root, *see* 87
 Royal Canadian Mounted Police, *see*
 North West Mounted Police
 Royal North West Mounted Police, *see*
 North West Mounted Police
 Rundle, Mount, 37
 Rundle, Robert, 37
 Rupert's Land, 9, 10, 44
 Russia, 54
 rust (wheat), 87
 rye, 84

S

St. Albans, 41, 42, 65, 86
 St. Lawrence River, 16
 St. Mary River, 66, irrigation project,
 80, 145
 St. Paul, 50
 salt, 94, 104, 105, refining of, 109
 sand, 90, 103, 114
 sands, oil, 104, tar, 96

sandstone, 98, 99, 101
 sapsucker, yellow-bellied, 153
 Sarsen Reserve, 49
 Saskatchewan, country, 10, 26, 31, dis-
 trict established, 37 province of, 38,
 44
 Saskatchewan River, 13, 16, 17, 31, 48,
 North Saskatchewan, 61, 64, 65, South
 Saskatchewan, 61, 64, 65, 67, 98, 134
 Saunders, Dr. Charles, 85
 Saunders wheat, 87
 saw, buck, 93, cross-cut, 91 power, 91
 sawmills, 91, 94
 schools, 35, 120-127 medical, 126, den-
 tal, 126, technical, 126, aircraft, 126;
 business, 126, agricultural, 126, Indian
 residential, 126; correspondence, 126,
 for area, 126
 Scotland, 84
 Seed Clubs, 112
 Sergeant-at-Arms, 128
 settlement, 32-33, free land, 32, work
 of church, 33, developments of, 33-34
 settlers, 32, 78
 shaft, 99
 shale, 98, 99, 101
 sheaves, 87
 shingle man, 114
 Ski Tournaments, 119
 Slave River, 30, 62, 64
 Smoky River, 62
 snout (wheat), 87
 soil, 72, conservation of (crop rotation,
 strip farming, contour ploughing)
 116-117
 Soviet Republic, 58
 sparrow, clay coloured, 149, white-
 throated, 149
 Speaker (Assembly), 128
 sport, 114-121
 spruce, 91
 Spruce River, 132
 squirrel, 94
 Stampede, Calgary, 76, 120
 Stephen, Mr. George, 42
 steppes, 61
 Stettin, of
 Stony Indians, 49

strip-mining, 59
 Sturgeon River 4, 45, 156
 sugar-beet cultivation, 8-54, *see also*
 "beet sugar", 110-111
 sugar beets, 81, 109 110-111
 surveying, 51
 swallow tree, 148
 Sweden, 52, 78
 Syllabics, Cree, 34
 Sylvan Lake, 48

I

Iber, 80, 81, 99, 102, 108
 tamarack, 9, 92
 tar, 114
 tar paper, 114
 teal, blue-winged, 155 green-winged,
 154
 Thatcher wheat, 83
 Thompson, David, 21 named Koo-koo-
 Sut by Indians, 24, surveyor, 59,
 61, 158
 threshing, 47 machine, 87
 thunder-pump, *see* batern
 tile, 114
 timber berth, 92
 timber cruiser, 92
 Telford, 68, 103
 Tenth Pin Golf Tournament, 120
 tourist trade, 115-125
 tractor, 86
 trading posts, 28-34, description of, 28,
 week at 30, amusements, 31, wed-
 ding at, 33
 Trans-Canada Air Lines, 1-40
 transportation, 114
 Treaty Day 49 money 48 Number
 Seven, 45-49
 Trinidad, 104
 trips, 99
 trout, 104
 "Turkey Trail", 94
 turkeys, 89
 Turner Valley, 100, 109 103

L

United Grain Growers' Association, 132
 University of Alberta, 126

V

Vancouver 49
 vegetables, 83, 84, 108
 Vegreville, 53
 Vermilion, 102, 124
 Vernon, 49
 Victoria Glacier, 69
 Vining, 93, 103
 voting, 128

W

Wainwright, 102
 waibeard, 91
 wapiti, 123
 warbler yellow, 90
 Waskana, 57
 Watson, 106
 Watson Lakes, 69 23 Upper Wat-
 son Lake, 114
 Watson Park, 69 114, 123
 Watson River, 145
 Waterways, 64, 104, 105
 waxwing, cedar, 152
 Western Sea, search for, 20, 62
 Wetsaskum, 48, 157
 wheat, 84
 Wheat Pool, 110
 Whitecourt, 61
 whitefish, 105
 window shades, 113
 Windsor Duke of 73
 "Worms, The", 39
 Wray, 119
 wintering partners, 13, 23
 Wood Buffalo Park, 106, 121
 wrench, house, 148

Y

yellow hammer or flicker
 Yellowhead Pass, 24, 60, 43
 York bow, 11 41
 York Factory, 8, 9 10, 11 28, 31

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